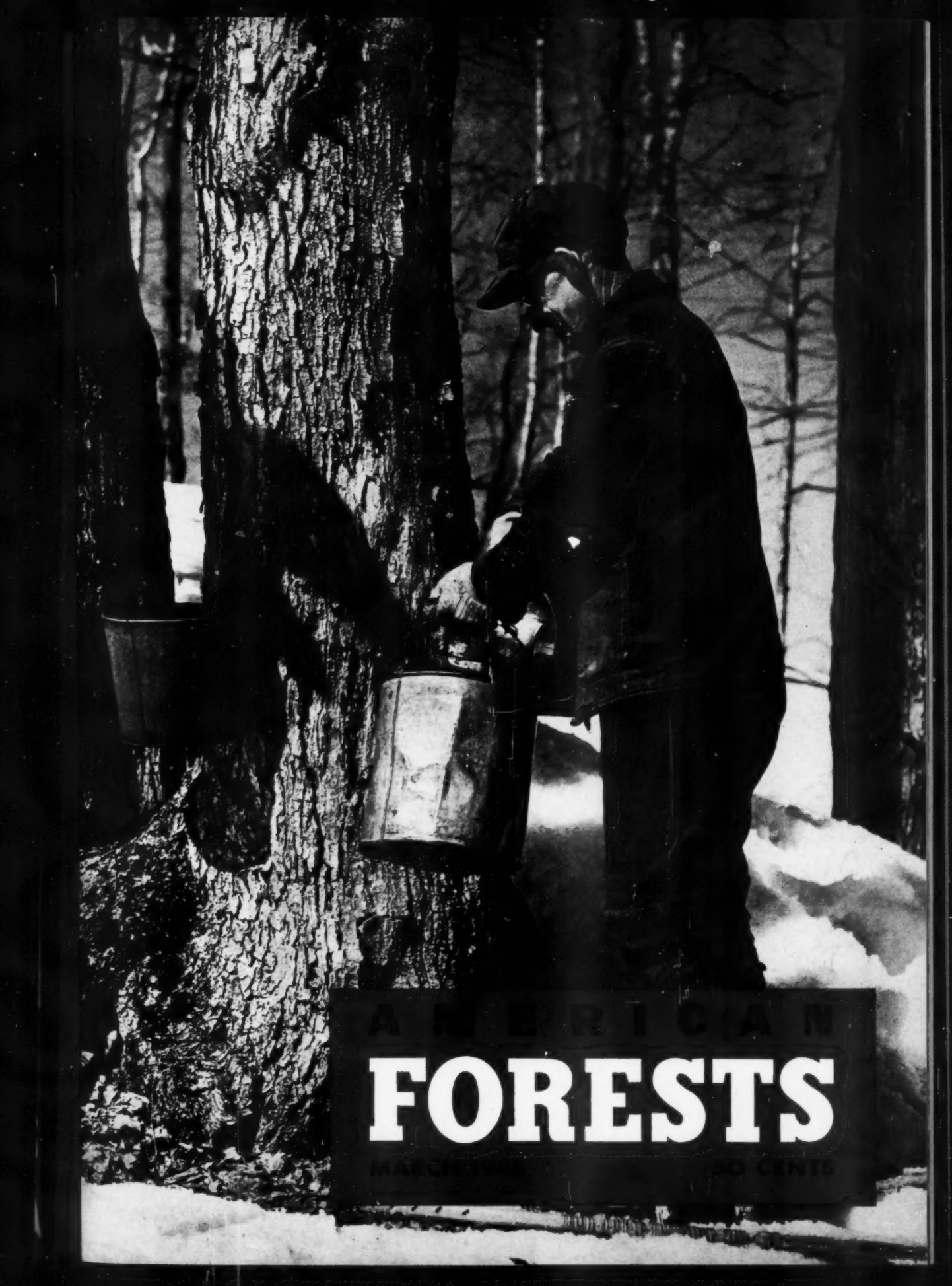
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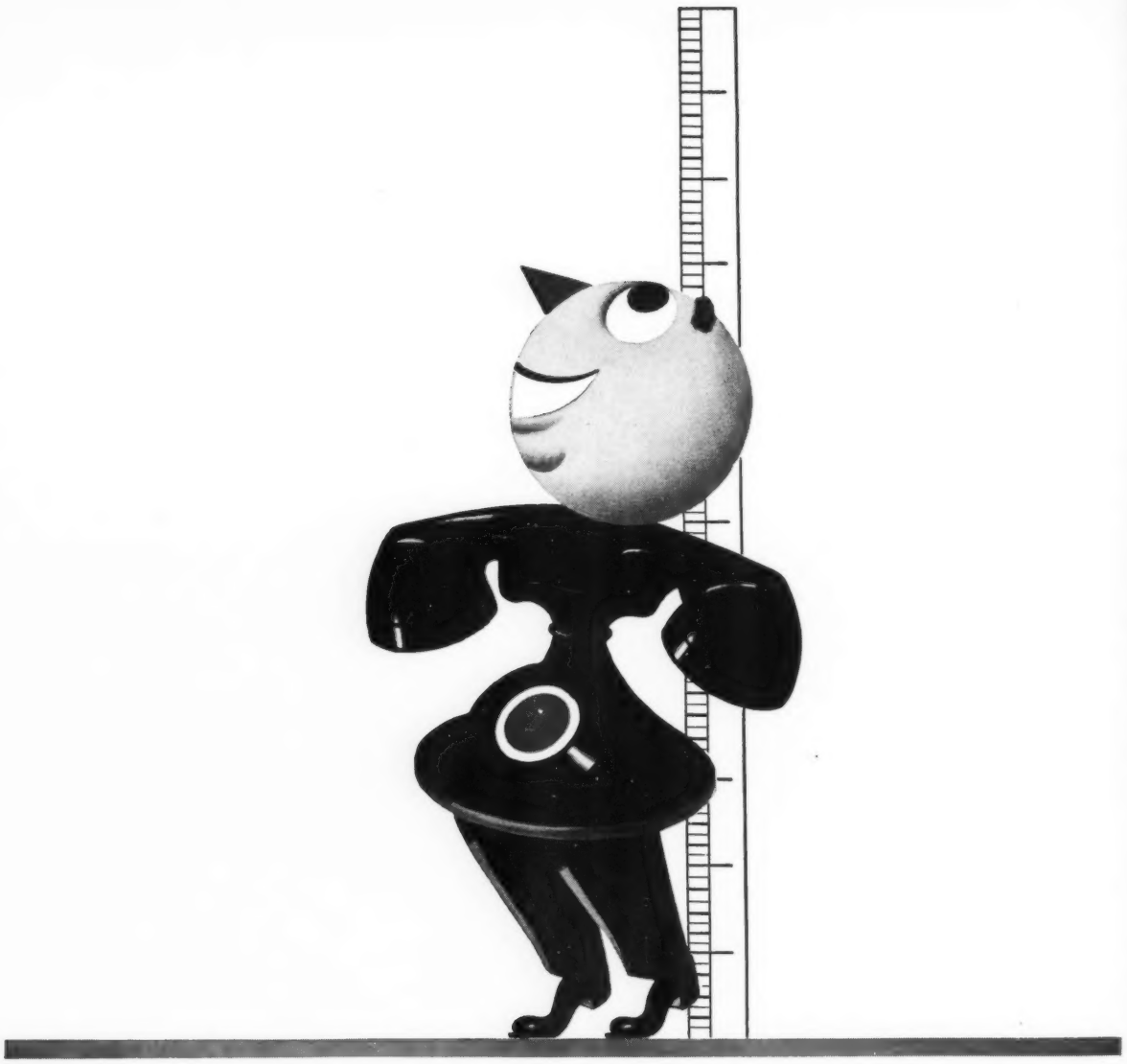

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Yuccas in bloom on the Arizona Desert

LETTERS TO THE EDITOR

Opposing Spokesmen Have Final Word on Olympic Controversy

SIR: Richard L. Neuberger, who we recognize as a vigorous supporter of the Olympic National Park, has, in my opinion, omitted certain considerations from his article, "The Olympics—Cockpit of Controversy," (December issue). These I would like to present.

On the Olympic Peninsula history is repeating itself. In the early days when forests were used up, the lumber industry moved westward to new virgin stands. Ghost towns stood in its wake. Today the mills of the Olympic country are between the devil and the deep blue sea — the devil being wasteful logging and resultant ruined forest land. With its back to the sea industry can no longer move westward.

The crying need is for industry to restore the peninsula's ruined lands, and conserve forests in present and future operations. It should be stated here that forest conservation in the Pacific Northwest does not mean selective logging. In the Olympic country clear cutting in blocks is the rule. Therefore, logging and preservation of forest beauty and recreation cannot go hand in hand on the same piece of land, as the industry would have us believe, if the Olympic Park forests are made available for cutting.

What can we expect if the park boundaries are changed and the virgin timber made available to industry? Exactly this: four more years of big-scale logging by the local mills; four more years of postponing the rehabilitation of cutover lands, and a flash of wealth to operators.

What can we expect if the forest remains in the national park? An adjustment of the mills to the available resource, however distasteful such adjustment may be to the operators; a beginning (if the industry accepts its duty to itself, the local communities and the nation) of forest restoration; and a growing tourist industry.

To what extent the tourist industry will grow will depend a great deal upon whether the rain forest remains intact, for this forest is the one outstanding feature, the crowning glory, that makes the national park different from all others. Some say that the peaks and alpine meadows are sufficient for the park. To say that is to miss the purpose of the park system. Each park is established to protect an outstanding feature, the finest of its kind in the country. Peaks and alpine meadows are now protected in several national parks and monuments but nowhere else is there a forest like this. Just as Grand Canyon National Park has the most spectacular example of erosion by water, so the Olympic Park has its rain forest.

Just what is this rain forest, and why is there such widespread interest on the part of so many to protect it? Like other great works of nature, words and pictures fail to convey its true character. One must see it to realize its wonder and beauty. I have seen it, walked through it, photographed it. It is a magnificent spectacle. Some parts are cushioned with golden moss far up the trunks of the giant conifers, while ferns cover the ground and rotting trunks and spread lacy sprays of pendent fronds on limbs far overhead.

If the loggers were to get only the outer fringe of the forest, all would be lost. The moss forest, farther in, would be subjected to drying winds that would cause a complete upset of the floral balance.

Another feature of the park is its herd of rare Roosevelt elk. If this is to be preserved, they must have the lower slopes and valleys now demanded by the loggers. These valleys are the elks' winter range.

As to the strength of the preservationists, Mr. Neuberger named but one organization, the Wilderness Society. There are many national and local groups opposed to any reduction of the present park area. Among them are the Sierra Club, American Alpine Club, Izaak Walton League, National Council of State Garden Clubs, National Parks Association, American Nature Asssociation and the Emergency Conservation Committee. These organizations represent the nation's best thinking on what is suited for inclusion in a national park. A year ago the preservationists proved their strength in the struggle to hold California's San Gorgonio primitive area intact.

It is clear that, owing to a diminishing resource, the Olympic logging industry is feeling the pinch, and this in turn affects communities made up largely of people employed by the industry. If concern had been felt decades ago when, for the same reason, communities were being wiped out farther east, we might still have an abundance of merchantable timber on formerly forested lands. The nation, as a whole, is perhaps not greatly worried about the Olympic mills. What is beginning to trouble the nation is the increasing scarcity of timber everywhere. For wasteful cutting in the past we are paying a penalty, not alone in insufficient forest products but in vanished wildlife habitat and in ruined watersheds. In the national economy the trees of the Olympic rain forest, as merchantable timber, amount to little. As a gem of nature's handiwork they are priceless and irreplaceable. Yet, the local lumber industry would impose upon us the added penalty of sacrificing this forest to their wasteful logging.

Olympic National Park is not yet well known. This is because state travel agencies, railroads and bus lines serving the area, and chambers of commerce have featured it little, if at all, in their advertising. It is just possible that the local people do not yet realize the greatness of the tourist attraction at their very door. When the park receives publicity comparable to that of other national parks, money should pour into the communities and the park should be a permanent source of income—but to a much lesser degree if it loses its rain forest.

Are the Olympic Peninsula communities suffering from want of a means of livelihood? I believe these people are as enterprising as Americans everywhere. The loggers portray them as the helpless victims of circumstance, but it is the loggers themselves who are victims of their own failure to look to the future.

To remove the rain forest from the park will not only upset the biotic unity of the reservation, but will set a dangerous precedent. If the forest were made available for logging, why should we suppose loggers near other parks would not seek similar concessions. If we give in to the Olympic loggers, could we hold out against similar demands elsewhere? The Olympic threat carries the germ of widespread disintegration of the national park system.

To speak of "locking up" the rain forest, keeping it from the lumber industry, makes as much sense as to speak of "locking up" examples of rare stones or minerals in museums. These, if released and processed for commerce, might make fortunes for a few but no one would think of making such a sacrifice. To speak of

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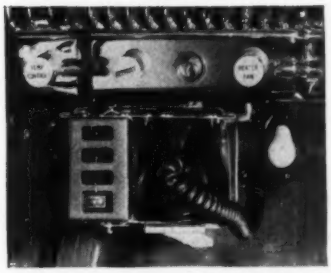

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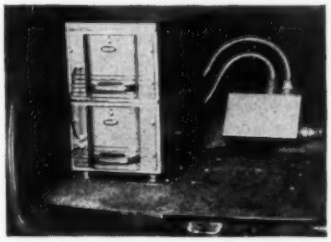

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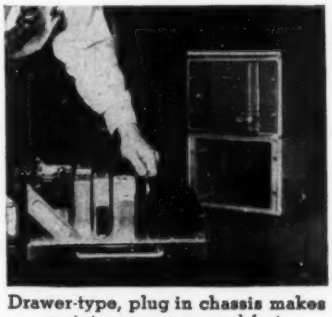

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THE AMERICAN FORESTRY ASSOCIATION
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"overripe" trees in this forest makes as much sense as to say that Independence Hall is outmoded and should be torn down to make room for a modern office building.

The Olympic rain forest is the only forest of its kind on the continent, perhaps in the world. Its unsurpassed beauty constitutes a source of spiritual uplift for all who see it. As one of the most superb exhibits of nature, it deserves the attention of every intelligent person to see that it remains intact; to see, too, that if protection by the National Park Service is difficult, due to present location of boundary lines, these lines be moved outward—not withdrawn—wherever necessary to simplify administration. — *Devereux Butcher*, executive secretary, National Parks Association.

SIR: The writers, who represented the communities of the Olympic Peninsula at the September 16-17 hearings before the subcommittee on Public Lands at Lake Crescent, Washington, believe Richard L. Neuberger's article on the Olympic National Park presents a fair and unbiased statement of facts with reference to the park. But there are one or two matters which we believe in fairness should be definitely clarified.

One reading the article might get the impression that proponents of a reduction in the area of the park are against any park. It should be borne in mind that residents of the Olympic Peninsula who were the most ardent supporters of legislation creating the park are the very people who now believe that the park boundaries should be materially reduced.

When these people advocated and strongly supported the creation of the Olympic National Park, they did so upon a report of the Park Service recommending a park of approximately 420,000 acres. This recommendation was based upon a study made by Preston P. Macy, assistant chief ranger of Mount Rainier National Park; George A. Grant, of the National Park Service; O. A. Tomlinson, superintendent of Rainier National Park; and David H. Madsen, wildlife expert — all in government service at the time of this survey. They recommended the creation of a park not to exceed 420,000 acres.

However, the park finally created by Congress amounted to 648,000 acres, and approximately 200,000 acres were added by presidential proclamation, making a park today of over 848,000 acres, with an additional 50,000 acres which have been acquired by the government presumably to be later added to the park. Within this vast area of over 1,200 square miles, there is locked up over 17 billion feet of overripe timber and much area which has little or no scenic or recreational value.

Aside from the study referred to, no governmental agency or commission has made any study of this area.

We want to make it clear that the people on the Olympic Peninsula want a good national park, but are convinced beyond all doubt that much of the area within the present boundaries can be eliminated without in any way detracting from scenic and recreational values.

One might take it from the article that regardless of the elimination of any additional timber from the park, the economy of the Olympic Peninsula would not be stabilized, and that in a few years the communities would again be asking Congress for a further elimination.

As far back as 1916, the record shows that the communities had then become mindful of the fact that logging in the Olympic Peninsula in the manner then conducted must of necessity within a very short period bring to the communities disaster. At that time a movement was started, with the cooperation of the U. S. Forest Service, to change the industries from straight lumber manufacturing to those of a more permanent nature, and to operate the forests of the community on a sustained-yield basis.

A survey of the potential of the area on sustained yield was made, based on conditions as they then found them to exist. As a result paper mills, pulp mills, hydro-electric plants and other kindred industries were built and, from that time on, lumber mills were either discontinued or remodeled to meet new conditions. A program of forest management was introduced and the capacity of the plants on the peninsula was reduced to approximately the amount of forest products from the lands that could then be used if operated to the best interests of the communities and the region as a whole.

When the park was proposed, the people on the Olympic Peninsula who supported it could not know that there would be injected into the question the feud, if one existed at that time, between Secretary Ickes and the Forest Service. The economy of the peninsula was upset not because of any past or present wasteful logging operations, but because the commu-

(*Turn to page* 130)

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Editorial

Education's Next Step

When a steady stream of citizens from thirty-six of the forty-one forest states of the nation appear in Washington before a committee of the Congress to urge better programs of forestry, the least one can assume is that the urgency of forest conservation is achieving nationwide recognition.

This was the impression that the subcommittee on agriculture of the House Appropriations Committee could not help but gain at its recent open hearing on the forestry phases of the budget for fiscal year 1949. For before them appeared members of the Congress and representatives of conservation groups, educators, industrialists, farm organizations, local chambers of commerce and just "plain citizens."

Without a dissenting voice, the witnesses spoke for better management of the forest resource, with particular emphasis on what may be called investments to protect, improve and maintain forest resource conditions. It is interesting to note that major emphasis was placed on the "cooperative phases" of the forestry program — on fire prevention and control, on tree planting, on aids to owners of small forest properties —phases in which federal appropriations will be used in the states to match state and industry expenditures. As one witness put it, the federal dollar spent in these activities will result in two dollars or more being used for forestry in the states.

Witnesses pointed to increased state appropriations for these items. They showed how the federal aid in the past has resulted in stimulating local or state-wide expenditures and they predicted that greater federal encouragement in terms of increased appropriations will result in even greater manifestations of local action. It was emphasized that in many states local governments and industries already are exceeding their "share" of the costs as defined in the Clarke-McNary and Norris-Doxey Acts.

That the educational activities of The American Forestry Association and similar organizations—state and national—have had a large part in bringing about the public awareness of the need of forest action as evidenced at the hearing cannot be questioned. Nor can there be any question that the educational phases of forest conservation are taking hold and are being translated into local and national action. There is evident also a swing away from the belief that forest conservation is a long-term program—to be handled by the federal government alone—to a recognition of the immediate and short-term returns of sound conservation measures in terms of economic and social values. This, too, is a product of past educational work.

Most encouraging was the evidence that education is beginning to produce results. Out of the confusion of criss-crossing publicity the public is piecing together the true story of America's forest resources and its condition and what should be done about them. More persons than ever before are reading and talking about conservation; more are showing an ability to separate the wheat from the chaff. Encouraging? Decidedly so! But it all points to the need for better coordination of activities in the educational field.

A study made by The American Forestry Association last summer as part of the groundwork for advancing its Program for American Forestry disclosed a wealth of educational activities and materials for many phases of conservation in a large number of states. Evident also was considerable duplication of effort and expenditures within states as well as nationally — educational dollars bumping into each other and wearing thin in the process.

To make the forest educational dollar most effective calls for a program of better coordination at the state level of activities peculiarly adapted to statewide application and similar coordination of nationwide activities.

Strong state forestry and conservation organizations are the answer to the problem of coordination within the individual states. They need to be bolstered with increased support from the citizens and industries they serve and to coordinate both expenditures and programs.

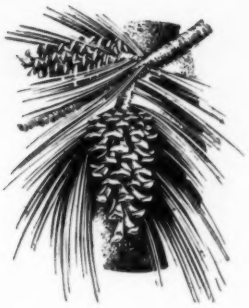
On the national level, this Association's Program for American Forestry proposes the organization of "the American Forestry Council through which interested individuals, groups, organizations and agencies will participate actively and collectively in translating" programs into concerted national action. Not the least important task of the council will be the review and appraisal for nationwide or region-wide application, of educational methods and materials developed or in the process of being developed in the states. When, for example, it is found that certain basic educational material is adapted to nationwide distribution, the council can render an invaluable service by providing it for state and local groups at the lowest possible cost. In this manner, duplications of initial expenditures will be avoided and more effective educational materials will be produced.

Such an approach to conservation education and action would not have been possible a few years ago. There were too many conflicting opinions on what the forest situation was and what was to be done about it. But now, as impressively shown by representatives from thirty-six states at the recent budget hearings, there is more or less general accord.

This points up the need and the timeliness of a program to unite the forces of conservation and to coordinate their efforts. Shotgun methods have paved the way. Costly as they have been, they have produced an awareness of the need for sound forestry measures and above all have produced a growing demand for action.

"Spring Sunshine through the White Oak." Photograph by Rutherford Platt.

A FOUNDATION FOR THE FOREST



By OVID BUTLER

The story of the Charles Lathrop Pack Forestry Foundation, its founding and its work

WITHIN a stone's throw of famous Scott Circle in Washington, D. C., there is located an organization which has the distinction of being the only one of its kind in the United States. It is the Charles Lathrop Pack Forestry Foundation. Among the more than one thousand privately-endowed foundations in America, it stands alone in having as its sole purpose the betterment of the social and economic well-being of our people by enriching their national environment of forest wealth.

President of the organization is Randolph G. Pack; vice-president is Arthur Newton Pack, both sons of the late Charles Lathrop Pack who established and endowed the Foundation. During the eighteen years since its creation the Foundation has forwarded constructive forest endeavors in virtually every field of forestry. Its interest has been as wide as the nation and in some instances wider. Its activities have extended into the pine regions of the South, the forests of the Pacific Northwest, the cutover lands of the Lake States, the woodlots of New England and the Central States, the forests of South America. Indeed, it may be said that the perimeter of the Foundation's interest is the forest horizons of the world, because it recognizes what too few Americans do, the present world shortage of forests and the possible impact of that shortage upon the future welfare and security of the American people.

Considering the many contributions to human welfare and progress which flow from lands rich in forests and the many American families who have attained positions of wealth and influence from the products of America's natural forests, the Charles Lathrop Pack Forestry Foundation is further singular in the foundation field as family recognition of the need of conserving a resource which played a large part in its early success. For the background of the Pack family is very much the forest. Any story of the Foundation and its work would be incomplete, therefore, without inclusion of the background from which it sprang.

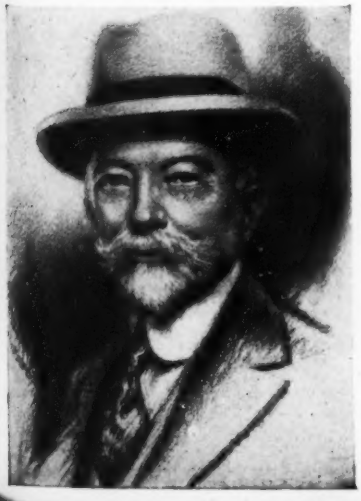
Its founder, Charles Lathrop Pack, was the son of George Willis Pack, a lumberman in Michigan during the 70's and 80's of the last century. It was there that as a young man he learned the lumber business. Those were the days when lumbering in the Lake States was speeding to a rough and tumble crescendo. The white pine forests of the region were being recklessly destroyed to meet the lumber needs of settlers sweeping into the Central and Prairie States. White pine was king of the lumber woods and the prevailing belief was that the supply was inexhaustible.

Although not yet out of his 20's, Charles Lathrop Pack began to question the inexhaustibility of white pine as he witnessed the forests receding at an astounding rate and increasing numbers of forest fires, which no one made any effort to stop, hastening the destruction. The scene raised a question in his mind as to the future of the lumber industry upon which he was embarking.

As destruction increased, doubts became a conviction that the days of white pine as the foundation of American lumbering were numbered. With the foresight that characterized his subsequent business career, he turned his interest to the South where yellow pine forests stretched in almost unbroken ranks from the prairies of Texas to the coast lines of the Carolinas. He began to acquire tracts of longleaf pine in Louisiana—a species of southern yellow pine which impressed him greatly because of its rapid growth, resistance to forest fires, fine quality of its wood for structural purposes and high yield of gum turpentine.

By the turn of the century lumbering in the South had taken on the pattern of large scale destruction that

Charles Lathrop Pack
Founder



Randolph G. Pack
President
Greenwich-Stamford

Arthur Newton Pack
Vice-President
Blackstone Studios

characterized the Lake States and to him the theory of inexhaustibility had become a fallacy not only as applied to white pine but to other woods of commercial possibility in a fast-growing America. It was then that he joined the small group of pioneers who had been calling upon the American people to awaken to the need of applying forestry principles to the management of their forest wealth.

One of his early public appearances was as a delegate to the American Forest Congress of 1905, called by The American Forestry Association to establish a broader understanding of the forest in its relation to the great industries depending upon it, and to unite all efforts to perpetuate the forest as a permanent resource of the nation. In the years that followed he became increasingly active, first as a member of the National Conservation Commission appointed by Theodore Roosevelt, then as one of the organizers and president of the National Conservation Association. For many years he was a director and president of The American Forestry Association. Through these and many other channels he gave generously of his time and money in support of a great variety of educational activities to instill into the American people an appreciation of the need of forest conservation.

His early conviction was that public understanding of forestry was an essential first step to its national adoption as the only economic course by which the forest wealth of the country could be perpetuated. To this end, he organized in 1922 The American Tree Association through which was issued during a period of almost two decades educational material running into millions of pieces which reached every section of the country and virtually every level of American life. Viewed in the light of passing years, there can be no doubt that this mass education leadership had a profound influence in the planting of thousands of acres of trees and in developing the conservation-minded America of today.

As public support of forestry spread, Mr. Pack extended his educational interest to the scientific fields of forest management. A virile and well-qualified profession of forestry, he foresaw, would be not only a powerful stimulus to public confidence and acceptance but an assurance that the profession could measure up to the many practical and technical problems which it would be called upon to face. Accordingly, he initiated a program of financial grants to provide for special studies, publications and fellowships in the field of technical forestry.

In the main these grants were made to some of the leading forestry schools in the United States. A number of them provided for the establishment of demonstration forests in which the best management technique could be developed and made training grounds for forestry students and demonstration areas for the general public. Yale, Cornell, Washington and Michigan universities, and the New York State College of Forestry were recipients of these demonstration forests.

Fayer

Tom Gill
Foundation Secretary

In these undertakings Mr. Pack had been joined by his two sons, Randolph and Arthur Pack, both of whom had long shared their father's interest in the social and economic importance of forests to the future welfare of the country. The former had studied forestry at Pennsylvania State College and had engaged in lumbering in Idaho and Louisiana and the latter had studied forestry operations in Europe. Following the first World War, both had felt that while mass education on a public level was still essential, a broadening of professional leadership and scientific knowledge adequate to deal with American conditions had become equally, if not more, essential. From these considerations, and from past experience which the Packs had had in promoting mass and specialized education, there evolved the idea of a foundation that would assure permanence of effort and flexibility of operation.

Accordingly, in 1930, after counseling with a number of leading foresters, including Henry S. Graves, then dean of the Yale School of Forestry, and Tom Gill, forester and writer of national recognition, the Charles Lathrop Pack Forestry Foundation was organized and incorporated in Washington, D. C., with an endowment dedicated to the advancement of the economic and social aspects of forestry through specific educational aids. It was a pioneering undertaking in the foundation field of American forestry. As such it has been free to carry forward its work unfettered by precedents and independent of governmental and industrial traditions and influences. Its mobile position in this respect has enabled it to expend its funds on undertakings which in the judgment of its directors would best promote the public and professional interests of forestry.

Charles Lathrop Pack, its founder, was its first president and served until his death in 1937, when he was succeeded by his son Randolph Pack, who has since been the guiding head of the organization, with a directorate of Arthur Newton Pack, vice-president, Tom Gill, secretary, and James A. O'Hearn, treasurer. In charting its educational pattern of operation, the Foundation has from its beginning had the advisory guidance of a Forest Education Board—now called Advisory Board—members of which are drawn from foresters or experienced forest men in the different branches of the profession and from different forest regions of the country. The board brings to the Foundation the judgment and advice of men who are actually engaged in forestry and its allied branches and who are conversant with problems of national and state scope which might warrant Foundation aid. Frequent turnover of board membership maintains a stimulating group of advisers and enables the Foundation to keep currently abreast with problems and developments in all fields of American forestry.

During its first seven years, the Foundation followed an educational policy of developing leadership within the profession and as a corollary, the gathering of a body of scientific information. The policy was carried out through a system of scholarship awards to practicing foresters of leadership promise in the different branches of the profession. In each case the selection of men and their study projects was approved by the Education Board, and each scholarship award carried with it a grant of

Pack grants include demonstration forests — training areas for forestry students at five forestry schools. Here students are shown in the Pack forests (above) of the New York State College of Forestry at Syracuse, and (below) the University of Washington at La Grande

funds considered necessary for the study.

Thirty-seven fellowships were awarded during the seven year period. In making awards, special emphasis was placed on the selection of young men who in their training or in their practical work showed potential qualities of professional leadership. In most cases these men were permitted to choose their own study projects which usually fell in the field in which the individual was interested or specializing. The result was that a great variety of subjects entered into the program.

This method of making awards was productive in point of technical information and specialized training, as evidenced by the number of men engaged in the work who now hold positions of responsibility in the profession. It was felt, however, to lack coordination of subject matter. When, in 1937, Randolph Pack became president of the Foundation, he inaugurated a new policy to meet the need of coordination and of greater concentration of funds to specific projects of current or potential urgency. Since that date the policy of the Foundation has been to place greater importance upon the selection of the project and to make awards or grants to men especially qualified in the field in which a selected project falls.

Following this new policy a series of special projects was initiated, the first of which was a three year study by Bruce E. Hoffman to determine the commercial possibilities of sustained-yield management of the forests of the Northwest. The study produced

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Maple Syrup—Luxury Product

By JOHN B. WOODS

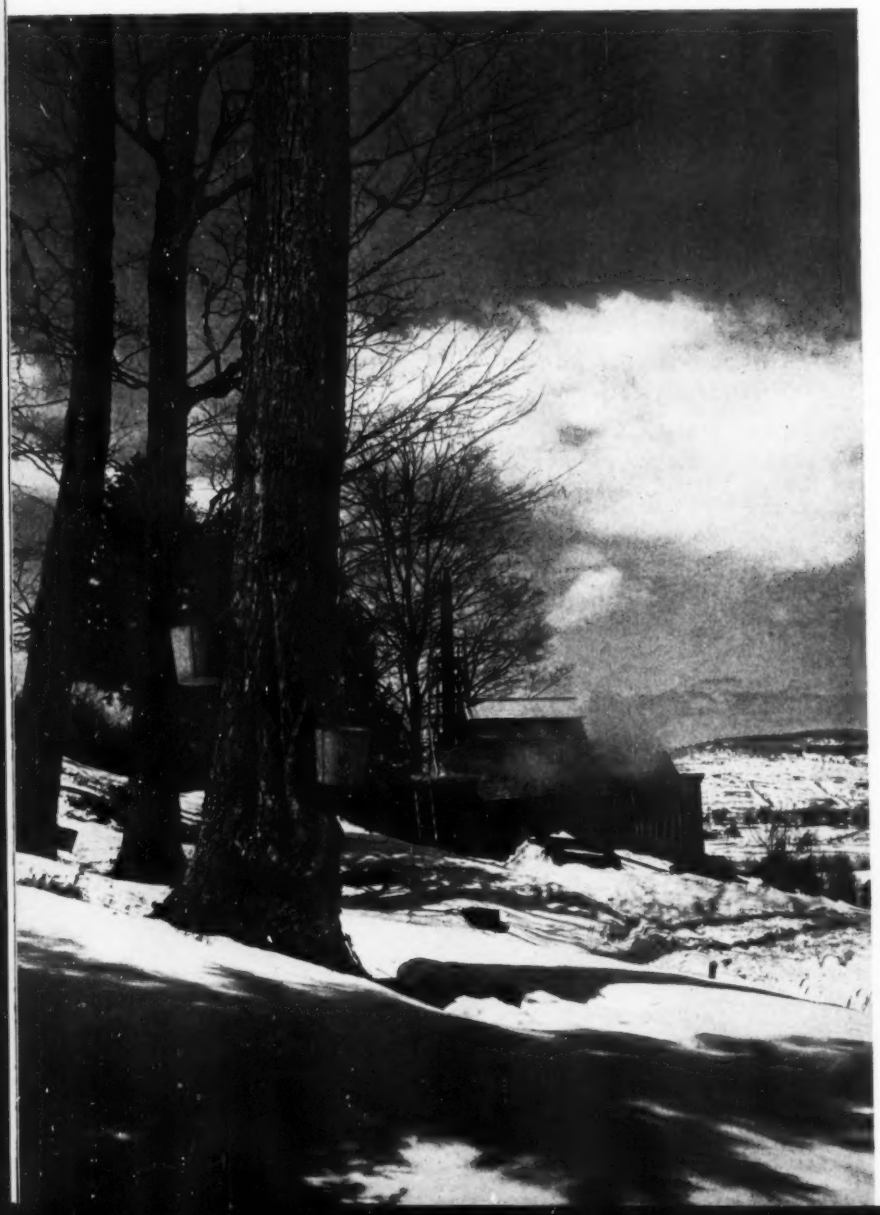
Vermonters produce and retail this luxury product right at home these days. They know the public, with an insatiable sweet tooth, will beat a path to their door

EASTER vacation in 1904 I spent at Uncle Ed Judson's farm in Concord. Doubtless when he invited me he expected that I would help in various small ways during the hectic period of spring activity known as "sugaring." However, being at an age when most boys are utterly useless and quite indifferent about it, I did little to show appreciation of a pleasant holiday. Most of the daylight hours I spent crawling through a fascinating spruce thicket, shooting at red squirrels with a .22 rifle, appearing at the farmhouse regularly for meals and at the boiling shed only when the special attraction of "sugaring off" was imminent.

Yet, for all this lack of interest, I did become conscious of the fact that the Judsons were intent upon producing a banner crop of maple sugar. In those days many farmers in New England and up-state New York relied upon maple products to pay for seed and phosphate, and because Uncle Ed's eldest son, Clarence, had just married and brought his bride home to the farm, it was planned to expand agricultural operations of all kinds so as to support two families. With this in view, they tapped the (for them) unprecedented total of 3,000 maple trees.

When sap was running, three men were kept on the jump outdoors, wading through deep snow to empty the brimming buckets, fetching back full pails to dump them in the gathering tank. Horse teams were changed each noon, because four hours of pulling the sledge with its heavy loads over soft snow and sticky mud was enough for a pair of horses for one day.

In the hot and humid boiling shed Uncle Ed tended the evaporator, alternately stuffing wood into the firebox of the brick arch and bowing his gaunt frame above the steaming pans. Boiling was quite a chore, demanding both energy and skill. Since for every gallon of marketable syrup produced forty times as much water was to be gotten rid of, it was important to keep all pans well filled with sap in various stages of evaporation. Always there was the threat of boiling over, and this Uncle Ed controlled by laying ramrods across the pans, each rod freighted with two thin strips of salt pork. He was an



Vermont sugar houses are generally found on the edge of the grove, on the downhill side

USDA Extension Service

USDA Extension Service

Sugaring is no picnic. Frequently, snow is up to a horse's britching when sap buckets are first scattered. Later, after quick thaws, the bobs of the gathering tanks sink into deep mud

agile virtuoso, firing the arch, opening valves to let in fresh sap, testing the contents of the "syruping off" pan with a long, wood-backed thermometer and, finally, by some inner prompting deciding that the sweet fluid had attained proper density to be ladled out, strained through a felt cone, and set aside to await final boiling down to hard sugar.

That was a good sugar year. Nature obliged with four or five sustained runs of sap, as periods of thawing weather followed hard frosts. Uncle Ed's sugar bush yielded a fair average of two pounds a tree, or a total of about three tons. For this he received slightly less than $600. A small part of his output was delivered to merchants and families in nearby villages—regular customers—but the bulk went to one of the maple products packing firms just then getting established in Vermont. This packer sold the best of Uncle Ed's sugar to nationally known wholesale grocery houses in New York, while the darker and more strongly flavored stuff was taken by manufacturers of chewing tobacco.

The Judsons were well pleased with their return on three weeks' hard work of four grown men and as many horses—really four weeks, since the wood burned represented another week of labor at cutting and hauling. And, of course, they had kept up with morning and evening chores—milking, separating, feeding and tidying up, so that there was no diminution of dairy income. No wonder they were satisfied!

Last year — 1947 — was another good year on the Judson place. Uncle Ed has been dead quite a while, and Clarence is now in his sixties, fit for "nothin' but chorin'," by his own admission. One of his boys remained at home and now operates the farm, assisted by his two sons, who are younger than I was in 1904, but infinitely more useful, being already expert at handling various machines used on the farm.

Their sugar bush has taken quite a beating from decay and wind through the years, so that less than 1,500 tappable maples are left standing. In 1947 they worked 1,000 trees, producing about one-third as much of the sweet as Uncle Ed turned out in 1904. This was not boiled down to hard sugar, but went to market as syrup, at a considerable saving of time and firewood. Yet it sold for more than $1,200! And practically none of their output found its way into the warehouses of maple

Boiling sap is hot work although modern equipment has speeded up the job, and is an improvement over the old brick arch and square pans

products dealers. Local merchants, townspeople and tourists got it.

Obviously, in forty-three years market conditions have changed materially for the farmer who produces maple sugar or syrup. This was to be expected. Yet, strangely enough, the greatest changes appear to have taken place since 1945.

Early in the present century the packing firms set about converting farmers to the idea of making syrup instead of hard sugar. They offered prices for the fluid form about equal to those for the solid—on a sugar content basis — and furnished clean oaken barrels in which the maker could deliver his output, thus saving time, fuel and the cost of pails or cans. In 1910, high-grade maple sugar was sold for nine to ten cents a pound, while a gallon of syrup comparable in quality and which actually contained seven and a half pounds of sugar and three and a half pounds of water, brought seventy cents. I recall these figures because that was the summer I worked in the plant of George Cary, a pioneer organizer of buying and packing maple products, at St. Johnsbury, Vermont.

By inducing farmers to supply large quantities of excellent maple syrup, he was able to build up a formidable trade with wholesalers of fancy groceries in "sap syrup," an article which could be advertised as coming to the user directly from the tree via the boiling shed. It had more appeal than did ordinary "sugar syrup," made by combining hard maple sugar and water, and it was vastly superior to the various "cane and maple syrup" mixtures marketed for less discriminating lovers of waffles and hot cakes.

However, farmers always have been stubborn people, clinging to old habits and given to hedging in matters financial. Despite the blandishments of large buyers, most sugar makers kept on boiling the bulk of their output all the way down to hard sugar. And Uncle Ed — and after him Clarence—along with most others of their kind, continued quietly to peddle the outturn of their first run of sap as "honey," or syrup to local merchants and village customers of long standing. Even counting this as syrup, it is extremely doubtful that so much as half of the maple crop of New England and New York ever went to market in fluid form in any year, until quite recently.

Clarence is authority for the statement that prices to the producer advanced very slowly. As recently as 1940, a gallon of good maple syrup could be purchased almost anywhere in these producing regions for $1.50 to $2, while twenty cents was regarded as an outrageous price to pay for a pound of hard sugar. The packers were in competition with producers of cane-maple mixtures, were in fact making such mixtures themselves as outlets for medium grade syrup and sugar. Tobacco chewing declined as more and more he-men took to smoking cigarettes, narrowing still another market. No wonder that the maple products packers strove to keep down the prices they paid to farmers for raw materials. In effect, the sales value of maple sweet was ruled by the price of cane and other sugars which could be used in its stead.

Yet, through the years certain strong characters maintained their conviction that maple sugar was a product deserving of special esteem. Maple candies came into general favor and were given wide distribution at luxury prices. A few thousand people, from Miami to Seattle, continued each spring to send back to their old homes in the Northeast for cans of maple syrup or pails of sugar. Tourists picked up considerable quantities in the aggregate from literally thousands of roadside farms. And nothwithstanding their difficulties of profitable marketing, the big packers bought what they could get of both syrup and sugar, year after year.

The total output fluctuated from one year to the next, according to weather conditions and hopes of high prices, yet by and large it declined in all states except Vermont. There were various reasons for this—scarcity of labor, removal of maple groves in order to cash in upon high log values, generally unsatisfactory returns for the work involved. As Clarence would say, "Don't forget that sugaring is mostly durned hard work."

The cutting of sugar groves in order to sell logs may well become an even more serious factor in limiting production, because the thrifty trees that are sound and much desired by the bobbin mills and other users of maple timber are the very trees that must be relied upon to stand firm and furnish sap in the future. Each year, in almost every sugar bush, a few veterans are blown down, while at the other end of the life cycle there is little or no attention given to starting and tending a new generation of trees. Pasturing livestock tends to prevent such renewal of sugar maple groves, and fortunate indeed is the farmer who, intentionally or otherwise, clings to his middle-age and thrifty trees.

Lack of knowledge about how to manage woodlands is widespread and, of course, this sort of ignorance is extra serious in the maple sugar regions. Recently there have been marked expansions of effort to teach woodlot owners the practice of simple forestry. Much more of such field education is needed by state and federal technicians.

Probably no more than half of the maples of tappable size in northern New England and northeastern New York are made to produce at any one season. Harold Dwinell, of the Vermont Department of Agriculture, who has watched sugar-making statistics for more than twenty years, estimates that there are at least ten million suitable trees in that state alone. From an earlier writer it is learned that in 1910, Vermonters tapped 5,585,632 maples (*American Forests*, November, 1945), while Dwinell's records indicate that in 1934 the number was 5,343,000 trees. Ten years later, because of wartime stringencies and low prices for the product, only 3,496,000 trees were worked, and in 1945 the number was even smaller.

Altogether, Maine, New Hampshire and New York probably add 15,000,000 maples to the workable stand. There is some small production in Pennsylvania, Ohio, Michigan and Wisconsin. Even in western Maryland, where hills are high and winters cold, maple syrup and sugar are made and sold by a few venturesome farmers.

During the last war, output of maple products slumped to a new low. Ceiling prices were placed at $2.09 for a gallon of fancy syrup sold to packers, $2.65 when sold to wholesalers, $2.92 when sold to retailers, and $3.39 when the farmer found the ultimate consumer for himself.

Even a figure of $3.39 a gallon was scarcely high enough to coax busy dairymen into large-scale maple production. Weather also was an important factor; in 1945, the season was very poor and in 1946 it was only fair. However, 1947 produced a banner yield, and as controls had been removed the public had opportunity to express its attitude toward this product of the American farm in terms of demand and price. The public paid, at roadside, for a gallon of maple syrup of unknown quality—since sampling is not practicable,

(*Turn to page* 140)

Trout for the Millions

By CLAUDE M. KREIDER

How science is providing better trout fishing in the lakes and mountain streams of densely populated Southern California

The problem of stocking easily-fished waters, close to large centers of population, has become a serious one. Leading icthyologists long ago realized that natural trout propagation in streams was too slow to match the annual take by anglers. Thus, began the innovation of growing trout in rearing ponds to a "catchable" size, under highly scientific supervision.

The Fillmore Rearing Ponds, in southern California, is not the first plant of its kind installed by the California Fish and Game Commission, but it is unique in that it is located in a heavily populated area, only a short distance from Los Angeles. Rainbow trout require clean, cold water, and ordinarily this is found only far back in the mountains. But at the Fillmore plant a great spring pours out 5,400 gallons of water a minute, at temperatures ranging from fifty-five to sixty-four degrees—within the narrow margin essential to trout development. The water flows rapidly through a series of thirty narrow, shallow ponds, each 100 feet in length, and these are literally alive with lively little rainbows.

The life history of these trout begins with a shipment, from one of the northern state hatcheries, of a large wooden case containing 150 thousand fertile eggs. Resembling tiny pink pearls, they are packed in trays, surrounded by cakes of ice, to maintain the necessary temperature during transit. The eggs are first placed on screen trays suspended in running water, and as hatching develops the tiny fish drop through the screen into the trough, where they live for the first two weeks on the substance of the egg sac. Then they become lively little minnows, ready for real food, and are transferred to large, round tanks for the required period before going into the outdoor ponds.

Rainbows are voracious feeders and their growth depends largely upon the amount and kind of food they receive. Thus, the Fillmore rainbows consume about 400 thousand pounds of carefully balanced rations each year. At feeding time, twice a day, they churn the ponds to a froth when the ground food is thrown across the surface, and the angler who watches their lightning-like movements will not wonder at his difficulty in handling their larger brothers in their natural habitat.

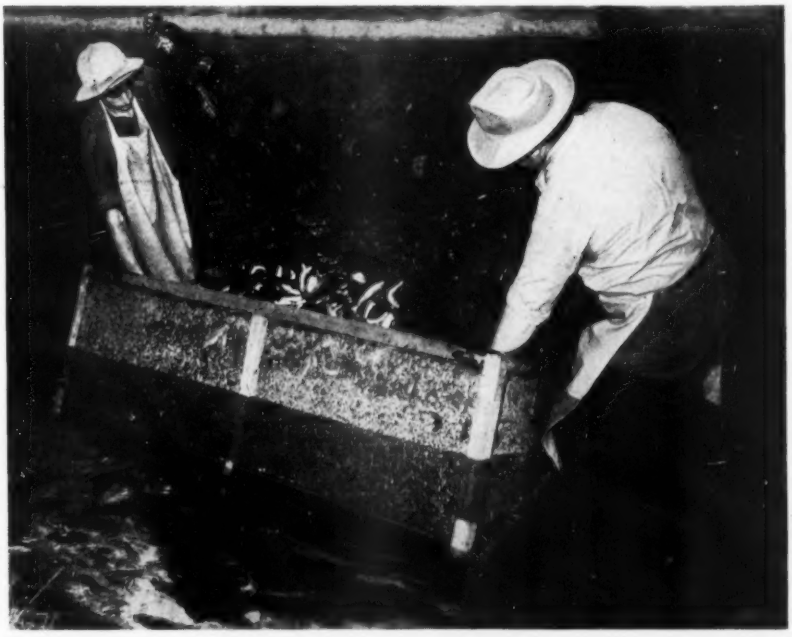
The rations are as carefully proportioned as would be those for a thriving baby. Sardines and anchovies from the fish canneries are used, along with clams and shrimp. Horse meat and other elements are added to provide the all-important B-1 vitamin.

At Fillmore, five pounds of food will produce about one pound of trout, at a cost of forty-three cents. That, from the angler's viewpoint, is cheap trout.

Even more important, however, is the fact that Fillmore is located close to many splendid trout streams, so that transporting and planting the fish presents little difficulty. They are from six to eight inches long when ready for distribution in the big tank truck, which will carry 500 pounds of trout to each 500 gallons of water. In transit, the water is kept continually circulating by a small pump, while an air pump adds additional life-sustaining oxygen to the water.

The mountain streams of the nine southern counties which the Fillmore plant serves, are planted in the spring and early summer, the number of fish for each being governed by the stream's capacity, food conditions and the calculated intensity of the summer fishing. The lakes, at 5,000 to 6,000 feet, are planted in the fall. Early summer anglers who visit Arrowhead, Big Bear and other favorite southern California lakes find these fall-planted rainbows "fat and sassy" and close to a foot long. And they are as colorful and gamy as their "wild" cousins of the streams, whose development to this size requires from one to two years longer.

Thus can anglers in southern California—and their number is increasing in this densely populated area—look forward to continued good fishing and more trout for their license dollar. For this they can thank modern trout management.

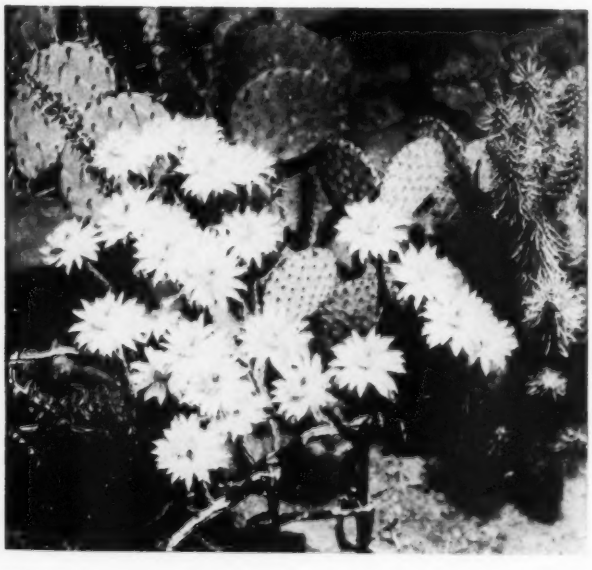


Ray Chapin

Rainbow trout of "catchable" size, ready for planting

FANTASY FLOWERS

By ANWYL EVANS



DAWN burst with a crescendo of light as we were motoring across New Mexico one morning, and suddenly we beheld a forest of silver. We had come upon a thousand acres of yuccas in full bloom. Also known as "Spanish daggers" and "candles of the Lord," they were so thick that a man could scarcely have walked among them. Some were two feet and some were twenty feet tall. Each was tipped with a giant corsage of white—the silver of the morning—and dew jewels added further glory to the June dawn.

It was a fair introduction to the fantasy flowers of the Southwest. Most Americans think of wildflowers as showy bits of color in a moist woodland or field, and consider the "desert" a region of burned rock and sand. Yet we were on that very desert.

Our experience in New Mexico led to a bit of investigation, which revealed that the number of desert flowers runs into the thousands, more than enough for any botanist's

The magic of the cereus, which blooms one night a year and dies the next day, has bewitched more than one desert watch party

lifetime study. Cactus plants alone offer some 600 representatives. Other flower families scale on down to individuals whose blossom can hide under a pinhead. Many a spring my wife and I have trod the desert where, as novelist Harold Bell Wright once said, we were exalted by "a Persian carpet of 10,000 acres patterned so thick with flowers that every step crushed them." We have learned that three plants tend to dominate in interest, perhaps because of their size. One is the century plant, also called "mescal" or "maguey." Another is that incomparable king of the cactus clan, the giant saguaro. Third is the yucca.

Yucca blossoms are as white as the lily, of which family they are a member, and each individual blossom is a waxy bell to cuddle in the palm of your hand. Clusters may be so thick and heavy that the average girl could never carry the stalk, much less wear it on her dress.

Immediate impulse is to gather them. Yet this is forbidden, by law and by two stronger guardians—sentiment of the people, and the sharp points on the yucca leaves. We were soon to learn—as you will when you come to this region of sunshine—that desert wildflowers are not for picking.

The life story of the yucca blossom is of extraordinary interest, for it offers a fine example of interdependence and cooperation in nature. A small moth, called pronuba, carries pollen from one blossom to the other, thus enabling fertile seeds to develop. Pronuba then lays her eggs in the yucca blooms, which hatch and nourish the young moths. The flower is wholly dependent on the moth, and the moth is wholly dependent on the flower. Each gives—and gains by the giving.

Yuccas are thickest in altitudes of from 2,500 to 4,000 feet. They are found in all the southwestern states and, while scattered plants may be encountered almost anywhere in the lower desert valleys, they like to climb the rocky hills. Often you will see a hungry range steer nuzzling into the rosette of yucca leaves to eat the tender flowers. In times of desperate grass shortage ranchers have chopped yucca leaves to feed their cattle. Each leaf, the shape of a dagger, is meaty.

The century plant, or maguey, even more than yucca, likes to climb the mountainsides and look down on puny man. Its rosette of leaves suggests that of yucca, but is much larger, each dagger being longer and heavier with an exceedingly hard and dangerous point. Common entertainment for Apache Indians in the old days of warfare was to capture a paleface, strip him naked and toss him onto the maguey leaves until death overtook him. I have seen maguey points go through a horse's leg.

Spread of the rosette may be two feet or ten, depending on the age and general virility of the plant. Leaves as long as one's arm, about as thick at the base, and ending in a hard point are perhaps average. One such cluster may be seen in the same spot year after year, without sign of a flower. Remember its name, century plant. Yet its blooming period is not a literal century, but from ten to seventy years. And when its time does come, it moves, paradoxically, with incredible speed.

"There's a giant asparagus stalk in the center of our maguey," a friend once told me. "We have had the plant sixteen years, and now it's stirring!"

The center stalk was indeed like asparagus, about ten inches thick. Moreover, it grew six to eight inches in twenty-four hours—after waiting so long to start. Others have been observed to grow a foot a day.

The stalk of the century plant strains up to ten, sometimes as much as forty feet, then puts out little side arms or branches at the top. It resembles a tall sapling pine trimmed bare except for the upper five or ten feet. The flowers

Above, white primroses, stars in the desert flower firmament. Below, the century plant or maguey, which blooms once in from ten to seventy years and then, paradoxically, with incredible speed

Chuck Abbott

With large showy blossoms, Devil's Pincushion is one of 600 members of the cacti family

bloom on the tops of these arms, like fingers cupped into open hands. Individually they are small and yellowish green. In the aggregate they are weirdly beautiful, spectacular. They last for weeks, then gradually die leaving the seed pods. By winter the whole stalk is a hard dried thing swaying in the chilly winds, the leaves brown and rotting. For maguey at blooming has completed its life cycle.

Once when I was new to the borderland I came upon a barefoot Mexican leaning far into the middle of a maguey rosette cluster. When I went closer I saw that he had chopped out the center of the plant (before it bloomed). Liquid sap had gathered in the depression and the man was sucking this into a large dried gourd.

He was harvesting *pulque,* which, if marketed immediately, is called *agua miel,* or sweet water. As such it is the soda pop of Mexico and of Mexicans on our side of the line, a palatable drink to delight the children and adult teetotalers. Non-teetotalers allow the *pulque* to ferment. Then it is *mescal.* Given some more time and treatment it becomes the notorious *tequila.*

From the fat leaves of the maguey come fibers that can be woven into thread or even into an excellent lariat rope. Indians have so used it for centuries, and Mexican cowboys love this maguey *reata* best of all. The same leaves have long been an item of food for Indians, notably the Apaches of New Mexico and Arizona.

The third of the great flowering desert plants, the giant saguaro cactus, grows mainly in Arizona and in northern Mexico. It has a form peculiarly its own—a tall stateliness, like a sentinel, often with arms that make it a candelabrum, a green serrated trunk bristling with thorns. It cannot be mistaken for any other growth.

Small wonder, then, that Arizona is proud of the saguaro and has made it the official state flower. The blossom, white and waxen, with a yellow center, merits that distinction. Growing in tight, flat clusters, the petals usually fold up under the glare of midday sun, coming to life in the cool of evening. It is in the purple Arizona night that the flowers offer their greatest charm. Somehow they seem to catch and hold the starlight to form a halo around the tips of the saguaro trunk and arms.

A strange plant, the saguaro grows only two to six inches a year, hence some of the giants are centuries old. It begins to flower about the time it turns fifty—and then can bear blossoms and edible fruit for four consecutive years even though there is very little rainfall. That is because it is a living water tank. The inside of its trunk is a spongy mass in which water gathered by surface rootlets is stored.

W. M. Tillery

Mariposa Lily is one of the belles of the desert's lavish coming-out party every season

These are the major flowering desert plants—the yucca, the century plant and the saguaro. But there are others that the desert traveler will encounter and enjoy. For instance, the prickly pear, the most widely distributed of all cacti, has a profusion of blooms that range from bright fiery yellow to dark maroon. The cholla, the jumping cactus, is another fascinating desert bloomer. Then there are the barrel cactus, the deerhorn, the strawberry, the sand dollar, the hedgehog, the desert star, the fishhook and the devil's pincushion. Their blossoms shame most artists and drive color photographers into a frenzy of eagerness.

Cereus, the "Queen of the Night," is a legendary flower. Its stalk is a leafless, gray stick twisting out of the ground among prickly pear or other growth which protects it. Then one sundown, without warning, small knots which appeared on the stalk months earlier will suddenly begin to swell. If one is fortunate enough to observe this, he can have a watch party until midnight, when the incomparable blossoms develop as if by magic. Within four hours the knots swell and open into a flower much like a water lily, four to six inches across, white with pastel purple tints, and a fragrance that can be detected sometimes half a mile away.

This desert queen blooms only one night a year, and is dead by next noontime.

Once an interest in desert flowers is aroused, an observer will not stop with the cacti, the yucca and century plant. The ocotillo, often miscalled a cactus, has an exquisite cluster of whip-like growths—which adorn the flats and slopes from west Texas to California. Each stalk, or whip, is three to fifteen feet long, and anytime from Christmas to July its tips may be seen "burning" like a torch. These are the flowers—flame red and in clusters.

The great bulging mass of yellow seen from a visitor's car window in April or May is a palo verde in bloom. It is a tree up to thirty feet in height, and for a few weeks it captures all the sunshine's glory. Individual blossoms are small, but the mass effect is one of grandeur. And yet, even these desert trees, even the great saguaro, the lesser cacti, the tall century plant, yucca, or ocotillo, are not necessarily the first flowers you will discover on the desert in spring.

The sheer profusion of ground flowers, such as poppies, on the desert can be breath-taking. It happens to a degree every year, but about one year in five conditions are so perfect that nature stages a lavish spectacle and flaunts everything in overwhelming abundance. I have seen Indian paint brush turn a whole hillside to crimson; and sand verbena create a Persian rug half a mile long.

THE CASE OF THE PUBLIC RANGE

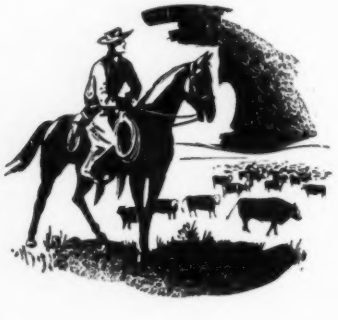
By H. H. CHAPMAN

Part II

HOW was it that the public domain was not filed on and acquired by private owners? Certainly it was not for lack of encouragement on the part of the General Land Office in the Department of the Interior. The most likely reason was in the failure of land laws and of Congress to adjust these laws, designed primarily for agriculture, to the basically different conditions of the semi-arid plains.

Public policy, when crystalized in statutes, is apt to show the same characteristics found in human behavior. Customs and habits continue to govern action long after their usefulness is served. The principle of the free homestead of 160 acres, with a few convenient loopholes such as the timber and stone act, was applied indiscriminately to farm land, timberland, and more and more to land suitable only for grazing. The fact that no one could make a living from the grazing capacity of 160 acres unless as a headquarters ranch for adequate surrounding free public range, to most of which well-entrenched users were ready to enforce their claims, made little difference. Up to 1891 the public lands existed only to be passed as rapidly as possible to private ownership, either directly or through grants to states and railroad corporations. The General Land Office was steeped in this policy—and new economic problems of land use failed to alter this fixation of purpose. The Romans had an expression for this persistence of patterns of thought and action. They termed it "the ruling passion, strong in death."

A break in this apparent impasse was the "stock raising homestead."



Under this law, enacted in 1916, title to an entire section of 640 acres could be acquired and the land fenced. That it would fail in its objective of creating homes for small stock growers was apparent from the beginning, however. The year-round carrying capacity of western grazing lands seldom exceeds one cow, or five sheep, to ten acres, and diminishes from that maximum to zero, with an average more nearly approaching one cow to twenty acres.

Eastburn Smith, in a report on the Rio Grande watershed in 1936, brought out that continued overgrazing had reduced the carrying capacity of the northern ranges in New Mexico to less than half, and the southern ranges to approximately a fourth of the original carrying capacity. He gave the then existing capacity of the grassland range as from five to nine cows for 640 acres, and from three to five cows for the browse types of range. Pine types carried no more than grassland.

Thus, a stock-raising homestead of 640 acres might support, depending on the condition of the range, anywhere from five to sixty cattle provided water was available, which in most instances it was not. This law, then, bore no workable relation to its intended objective, and on only a small percentage of the lands filed upon was title ever perfected. Yet, in 1917, Clay Tallman, commissioner of the General Land Office, made this statement: "We will dispose of all of the public lands possible under existing laws, and then we will get other laws to dispose of the remainder." So far no trace of recognition of a new problem had dawned on the General Land Office. Should new statutes have been enacted to facilitate the transfer of the remainder of the public lands to stockmen, who are the primary users? Until very recently that appeared to be the objective of the livestock industry.

If it could be said that the production of meat and wool constituted the sole public interest in these national properties, and if it were proved beyond reasonable doubt that grazing areas could be segregated from forests and watersheds and passed to private or state ownership without prejudice to timber growing, irrigation, water supply, recreation and wildlife, this possibility could be examined on its merits. Organized stockmen contend that, given fee simple ownership, or its equivalent in perpetual easements not subject to federal dominance either as to grazing fees or numbers of stock, enlightened self interest and freedom from competition would result in voluntary self-regulation by owners, limiting the number of grazing animals to what the land would support.

Against this contention lies the extreme stubbornness of a great many stockmen in refusing to admit the insidious effects of overgrazing. Added to this is financial pressure to increase the number of stock on the range to maximum capacity in wet seasons, which inevitably results in range damage when the dry cycle appears. An increasing number of stockmen are receptive to modern technical guidance in range management. But when acceptance of this advice is optional with the stockman. what is to protect public interests?—or the rights of small owners who might be squeezed out by large outfits under fence?

During the decades between 1905 and 1934 the contrast between controlled grazing within the boundaries of the national forests and free use of the outside public domain became increasingly evident. Yet, trained technicians of the Forest Service. alert to grazing damage, were powerless to stop the march or destruction on the adjoining open range not under their jurisdiction. And while they emphasized the need of control measures, they were restrained despite the many possible advantages of such a course, from urging that the remaining area of the public domain be withdrawn from entry and placed in one unified control under the Department of Agriculture. One of the main arguments for this was that the herds that graze on the public domain during the winter are the same that move into the national forests in summer—same animals, same owners.

After 1925, for want of applicants, disposal of the unwanted residue of the public domain was practically terminated. And in the early 30's the Department of the Interior, through Secretary Harold L. Ickes, responded

J. S. V. Peshaneo

Poor cattle and poor range go hand in hand, as the picture above testifies. This badly depleted area is in Idaho. But given protection, the range can be restored, as shown at right. Grass is returning to this fenced-in area on the Tonto National Forest in Arizona, while outside, where hungry cattle still graze, all that is left for them is snakeweed. Below, a dramatic example of what happens on the overgrazed range during a rainstorm. Heavy run-off starts the processes of erosion — and loss of topsoil

U. S. Forest Service

to pressure for conservation of the range resource by supporting legislation which emerged, in 1934, as the Taylor Grazing Act. This brought eighty million acres of the unreserved public domain under management as "grazing districts" and created the Grazing Service in the Department of the Interior to administer them. Later, in 1936, the area was increased to 142 million acres.

Why was administration of these districts entrusted to the Department of the Interior when the experience and technical know-how was in the Department of Agriculture? Some insight into this may be gained from testimony during congressional hearings which preceded passage of the Taylor Act. E. A. Sherman, testifying for the Forest Service, stated that it would cost $2,000,000 a year to "administer and improve" the public range. As against this, Rufus Poole, solicitor of the Department of the Interior—and this figure was also presented by Secretary Ickes—estimated the cost at $150,000. Around 173 million acres were involved. Interior was given custody of the grazing districts, but the fact that appropriations were increased yearly to a peak of $1,300,000 in 1945 and 1946 is eloquent testimony to the experience and judgment of the Forest Service. This was further emphasized when Interior, to set up a system of administration and control, was forced to enlist experienced Forest Service personnel.

The fate of the Grazing Service after a decade of struggle is, of course, well known. Ground between the upper and nether millstones of the House Appropriations Committee and the successful resistance of stockmen to increased grazing fees, the service as such was destroyed by the 79th Congress when appropriations were reduced to $425,000 a year—a cut of $869,000. All that remained after this was a skeleton supervisory staff and field force—and the livestock owners, in effect, were relieved of practically all vestiges of control on the public range.

Indeed, it should be made clear that the influence of the stockmen through their national associations and local advisory boards was far more powerful in the Grazing Service that it had ever been in the Forest Service. As a result, grazing fees remained frozen at their original low level of five cents a month a head for cattle and one cent for sheep. Such efforts as were made by the men administering the grazing districts to increase fees were quickly and easily nullified by powerful political influences.

This was brought out in forceful fashion by Representative Jed Johnson of Oklahoma, a member of the House Appropriations Committee, during debate in 1946. Said Mr. Johnson, "We passed the Taylor Grazing Act after a former Secretary of the Interior appeared before committees in Congress and assured us that it could operate on $150,000 a year and that it would be self-supporting. Over and over we were told that the Grazing Service would be self-supporting. . . . But what did the Grazing Service do? They went out and practically turned it (the service) over to the big cowmen and sheepmen of the West. . . . It is common knowledge that they (the stockmen) practically have been running the Grazing Service. . . . Imagine our surprise to find them charging one cent for sheep per month and five cents each for cattle.

"Year by year the committee has said, 'Get your house in order. Live within your income. Be self-supporting.' This year they (the service) asked for more than $1,700,000. They told the committee that was the least they could operate on efficiently. We asked the head of the Grazing Service, 'Have you raised the fees yet?' His answer was 'No, we have not raised them.' There were certain individuals who apparently had sufficient influence to prevent any effort along that line. . . . We gave them $425,000, the amount that they collected and which goes to the federal government, and we said to the Grazing Service, 'Live up to your contract, live within your revenues.' And by the eternal they are going to do it whether they like it or not."

As they stood, Grazing Service fees were about one-seventh of those for similar rights on the national forests, or state land, or on private land under lease. And because it could not increase its fees, the service was forced to pay the piper—to live within its income. This was logical from a fiscal standpoint, not displeasing to western senators and livestock interests, and reminiscent of Aesop's fable of the monkey who used the cat's paw to pull hot chestnuts out of the fire. The Congress, which has heard from a belatedly aroused public, is now contemplating the restoration of most of this appropriation. But the damage has been done.

In July, 1946, President Truman put through a reorganization measure which abolished the independent Grazing Service and consolidated it with the new Bureau of Land Management in the Department of the Interior. On the surface this looked like a forward step in streamlining administration. It was—but in what direction?

In answering this, bear in mind that the administration of a great natural resource such as timber or forage is a matter requiring the highest type of public servant with years of training based on a sound technical education. This is an ideal fortunately adhered to by the Forest Service. Still more important, a man with these responsibilities must be a civil servant appointed on merit and free from the influence of political patronage and revenge, in case he has to resist the efforts of powerful interests seeking special privileges in the monopolistic use of timber, grazing, or other resources. This kind of organization, and only this, has given to the Forest Service its efficiency and, as a consequence, the support of Congress and the public.

When the reorganized Bureau of Land Management finally emerged full fledged in 1946, not one of its key administrators could be said to have had basic technical training in the management of the natural resources of the western public domain. Its director was Fred W. Johnson, former commissioner of the General Land Office; its associate director, since resigned, was Joel D. Wolfson, formerly assistant commissioner of the General Land Office. Of its six branches three were headed by General Land Office men. In charge of the branch of Range Management, which took over the functions of the Grazing Service, was J. Will Robinson, former member of Congress from Utah.

Concerning this situation, F. E. Mollin, executive secretary of the American National Livestock Association, in a letter to Lyle F. Watts, chief of the Forest Service, stated in October 1946, "Last spring Congress in its wisdom made a sharp cut in the appropriations for the Taylor Grazing Service. The wailing that came from that organization at the time indicated that all was lost. Under new management the Grazing Service in cooperation with the National Advisory Council, and with a committee of the two national livestock organizations, is working out a policy that I believe will be for the best interests of everyone concerned. It will establish a basis for the operation of the Grazing Service at a minimum

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Why Emil Planted Trees

By A. G. HALL

THE pick-up truck swerved loosely in the soft ruts of the truck trail. The frost which kept the surface hard all winter had left the soil and it was up to the warm spring breezes now to dry out the winter-caught moisture.

Ahead of us and off to the right where a weedy bank made hiking a bit easier, I saw the figures of a man and a dog. "Who's that up ahead?" I asked the engineer who was taking me out to look over some plans for spring construction work.

"That's Emil, probably checking up on his last year's plantation and giving this year's sites a once-over. You ought to talk to him sometime."

We passed Emil, with a wave of the hand, and sloughed on to our projects.

My chance to meet him came that evening in a dingy tavern, where he was behind the bar. A tall, handsome man in his late fifty's, he looked at least 10 years younger. His military bearing, I learned later, had been acquired in the army of a Russian czar.

Recognizing us instantly, Emil beckoned us over to the bar which he was preparing for the evening's trade. There were a few customers about, but when he learned that I was interested in his plantations he seemed to forget about his shop.

"How many trees have you planted?" I asked him.

"T'irty t'ousand!" was the quick reply.

"Now, ask him how many survived?" the engineer cut in.

"I check this morning," Emil said. "I have two, maybe t'ree t'ousand good ones."

Without further questioning, Emil went on to explain the failure of his plantations. He had obtained good stock from the state nurseries and expert planting advice from both state and federal foresters locally available. Most of the planting had been done under his personal supervision and to his satisfaction. One year he had hired a crew of planters, and it cost him $13 a thousand to get the trees into the ground.

Emil's plantation trouble was deer. As he explained it, snow covers the fields early in the winter and the tempting green tops of his planted pines draw the deer out of the woods. "They don't eat the whole tree," he said. "They just bite off the top bud, then go on to the next tree on down the row."

The plantations were not given to the deer without a struggle, however. Emil's first attempt at control was with dogs. They were effective, but the game commission put an end to that. "The game warden told me, 'Emil, get rid of those dogs. If I see them chasing deer, I'll have to shoot them.'

"I tell him," said Emil, "that I use only mongrel dogs. I don't use hunting dogs. Mongrels chase deer only as far they see them. Mongrels don't track, like hunting dogs do. But the warden says, 'Emil, a dog is a dog; you get rid of them.'"

Next Emil tried paint. Each fall after the growing season had ceased, he would go forth armed with paint brush and can. Carefully he'd coat each terminal bud. The paint treatment was only partly effective; soon the deer came to relish, or at least to endure, the painted buds.

Then he tried paper bags. "Just before winter," Emil went on, "I got a couple t'ousand paper bags. I tie these around the buds, leave them there 'til spring. Then I go back and take off the bags so the tree can grow."

The bags helped some, but too many were torn off by the deer to make it effective control.

But Emil had his problem partly solved. All he needed to do was find some protective cover for the terminal buds—something relatively easy to apply in the early winter and easy to remove in the spring.

One day he took a trip to a commercial nursery where he saw just the gadget he needed.

"Just a minute," Emil said suddenly, "I'll be right back."

He disappeared behind a doorway which led into a storage room, and returned with a carton full of assorted strips of tin, each strip about six inches long and three inches wide. On top of the heap lay a pair of tin shears.

"Look!" said Emil, "I take a piece of tin. Then I cut it like a comb."

Swiftly, as though working against time, he made about 15 deep snips along one edge of the tin, snips that extended to within about an inch of the opposite edge.

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THE FOREST FRONTIER IN CONNECTICUT

By HENRY S. KERNAN

AS THOMAS HOOKER and his congregation of native-born Englishmen struggled westward from Massachusetts Bay in the spring of 1636, their sense of weariness and confusion must have been well nigh overwhelming. The trail, Indian fashion, followed every capricious twist and dip of the seemingly patternless east Connecticut upland. A hurricane the year before had wrecked and uptorn and broken the dark and dank forest of giant trees. In its depth were the Indians, "children of the devil," with ominous and fearful names such as Nehantic, Nipmunck, Podunk, and Poquanack; and spirits even worse, Manitou, Kiehtan, Hobbamock — surely expatriated fiends and goblins. For these early Americans the vernal forest with its fresh green leaves, its flowers, and imposing heights, held no charms. It was, in the words of Cotton Mather, "A desert full of dismall circumstances." They must have sighed with relief when they reached the Hartford meadows. With these as a base they attacked with a dendrophobic fury that in a few generations cleared their state of its primeval forest.

However, so great was the resilience of the native trees that 310 years after the founding of Hartford no traveler can justly complain of their lack. They line the streams and shade the streets. They cover the uplands and creep down into the valleys along every stone wall, fencerow and road. An abandoned field may be covered with seedlings in five years and be a woodlot in twenty. Trees are an intimate part of the life, the landscape and the history of this tiny state, whose war industries led the country in per capita output and whose population now tops 1,700,000—95 percent of it city-dwelling.

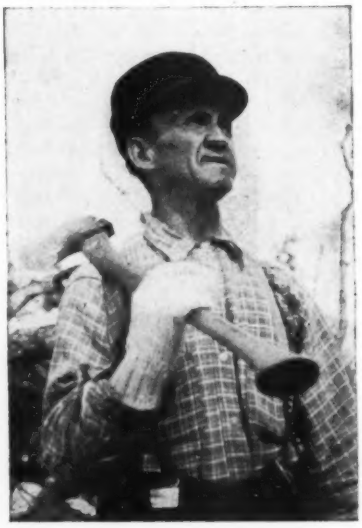
Connecticut is 95 miles long and 60 miles wide—no larger than many western counties. Geologically it is an eroded peneplane tipped slightly to the south and east. Running north and south are a series of valleys separated by rugged uplands. The largest of these is the Connecticut Valley, whose red soils and trap rock outcrops are unique features within the state. Here economic life is dominated by the insurance business of Hartford and the manufacturing of New Haven. In agriculture the cloth-covered tobacco fields reign supreme, and their fabulous crop is one of the most risky and rewarding known to man.

The eastern highlands have long been relied upon by a textile industry that found abundant water power on the precipitous Quinnebaug, Natchaug, and Shetucket rivers.

The western highlands reach spectacular heights only in the northwest corner among the Litchfield Hills, where, it is said, was developed a breed of sheep whose legs of unequal length and pointed noses were adapted to the steep and rocky hillsides. This area, especially in the Naugatuck Valley, is a center for brass foundries, for which the forests were clear-cut repeatedly before the first World War.

The fourth division of the state is the seaboard, whose salt marshes, inlets and cities are familiar to every traveler between New York and Providence.

After the "big blow" of 1938, this old logger went to work for the Salvage Administration



With such a background the central problem of forestry in the state remains this: How can the 1,907,000 acres of woodland, 61 percent of the area, best contribute to the welfare of the citizens?

This problem has been under scrutiny since 1896 by the Connecticut Forest and Park Association, one of whose objects is to "make Connecticut a better place in which to live."

Since that time most of the basic forestry problems have been met and at least partly solved. A system of fire control usually keeps the area burned annually down to .44 percent. State parks and forests now cover 176,577 acres. Thirty thousand acres have been planted. A tax law granting relief to forest owners is on the books, although little used, because actually taxes are reasonable. Four Norris-Doxey farm foresters are at work and probably a quarter of all timber cut is marked by conservative rules. Regular work keeps in check the gypsy moth, the Dutch elm disease, and other pests. When the Civilian Conservation Corps camps were opened in 1933, the state foresters had prepared a work program which went forward steadily; and the hurricane of 1938 was followed by vigorous action of the state and federal foresters.

An examination of *Connecticut Woodlands*, published by the Forest and Park Association, shows what problems remain uppermost. Naturally most of these hinge around recreation. Trails must be maintained and extended. Parks and forests must be acquired. Roadsides must be improved and billboards controlled. The rights of both the landlord and the hunter must be guarded.

However, the association has realistically conceded that all efforts combined are not enough to protect the private forests unless the owners have some abiding interest in handling their woods one way and not another. To give these woods an economic val-

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Forestry in Connecticut is closely interwoven with recreation and the maintenance of such scenic tracts as the Cockaponset State Forest with its winding Hammonasset River

ue by marketing the products has become the primary problem in Connecticut forestry. These forest products are quite different from what the Puritans found, and this point requires some explanation.

Beginning about 1820, rural population decreased as ambitious native sons moved to the towns or the western states. In either case the old folks were left to battle the hardhack and bayberry on the stony upland farms. Light-seeded, fast-growing hardwoods, such as gray birch, cherry and red maple, increased enormously. The owners, always under economic stress, sold off these stands to the nearby charcoal pit, sawmill or tie yard; and the trees began again as sprouts. Wind storms, although not often of hurricane proportions, occasionally tip over dominant trees here and there. Also ice storms have a way of breaking the tops of the best trees. Since much of the cutting operations in Connecticut is for railroad ties, a 12-inch oak is salable and is usually soon cut. The climax came in 1938 when most of what remained of large timber was blown down.

The most striking result of this history is the change in forest composition. Although Connecticut is within the oak type, these species, along with hemlock and pine, have been steadily losing ground to the faster growing species previously mentioned and to a variety of others. In the state forest survey no less than 40 species are recorded separately. Furthermore, the average age of the forest has been lowered to where 90 percent is less than 60 years old and more than a third less than 20 years.

This last figure is significant because it shows to what extent the forest has been cut, and with what vigor it renews itself. Connecticut's particular combination of soil, climate and species is such that planting is seldom needed or desirable. In the last 20 years 30,000 acres have been planted and 688,000 have regenerated naturally. Of the two types, no one can claim that the plantations, for all the expense, are any better forest than the latter. The landowner would usually do better to turn his attention to managing his woodlot and let nature take care of his fields.

His woodlot is, typically, not understocked. The species may be poor, the stems crooked and the branches big; but usually there are too many rather than too few trees to the acre. The acute problem is too little wood on too many trees. They must be thinned; and this leads back to the economic problem of thinning at a profit. To solve this not only the size and species must be considered, but also the pattern of forest ownership.

(*Turn to page* 142)

Connecticut's primary forestry problem is that of instilling in landowners an abiding interest in the economic value of their woodlands

KNOWING YOUR TREES

PACIFIC MADRONE

Arbutus menziesii, Pursh

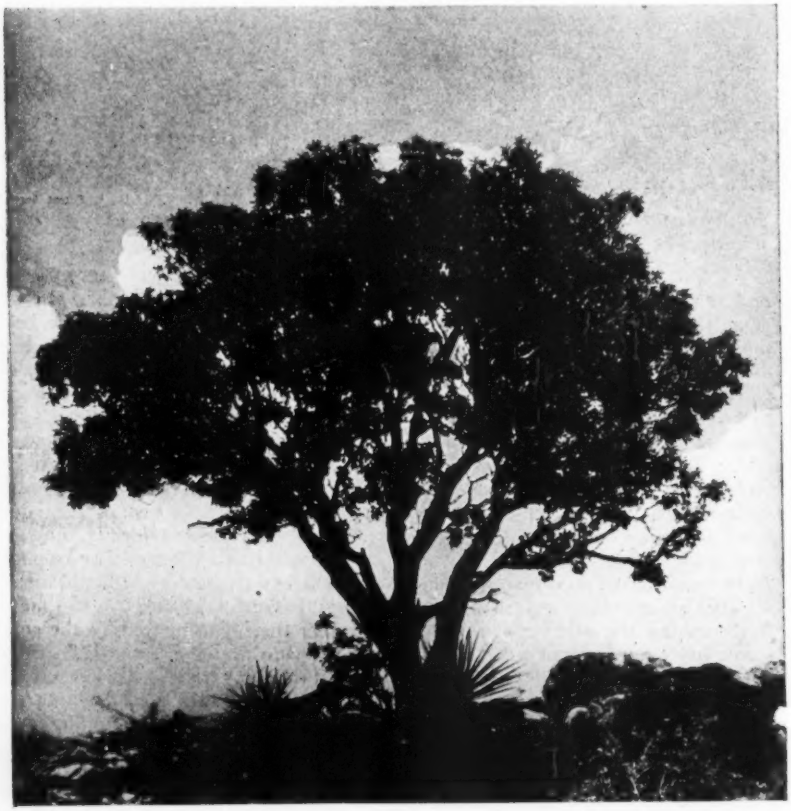
By WARREN D. BRUSH

PACIFIC madrone belongs to the Heath family (*Ericaceae*), which includes also the rhododendron and mountain-laurel or kalmia. Called Pacific madrone or frequently just plain madrone, or madrona, this colorful tree adds its exotic charm to the greenery of countless slopes throughout the length of the coastal mountains, from British Columbia south through western Washington and Oregon to southern California. Its red-brown trunk, red branches and shiny, evergreen foliage distinguish it at once from all other trees or shrubs in its range.

The naturalist John Muir wrote of this tree: "The madrona, clad in thin, smooth, red and yellow bark, with big, glossy leaves, seems in the dark coniferous forests of Washington and Vancouver Island like some lost wanderer from the magnolia groves in the South." Its distinctive dark red bole is only slightly more eye-arresting than are the foliage and fruit. Sometimes it is described by local people as the tree which sheds its bark instead of its leaves. This description has some basis in fact since old leaves persist until the new are fully grown, and the bark on the lower bole divides into thin, scaly plates which fall off in the summer and fall.

Because Pacific madrone is found abundantly scattered over sunny hillsides where soils are poor and rocky, people are prone to overlook the fact that it grows much better on fertile, moist sites. Its best growth is attained on well-drained soils, near sea level, where it ranges in height from eighty to 125 feet or even more, and from two to four feet in diameter, breast high. In both the coast ranges and western Sierra of California, it may be found up to 4,000 feet elevation. This species often forms nearly pure stands, although it occurs in much greater abundance as an understory species in Douglasfir and redwood forests or in association with mixed broadleaf and coniferous trees.

In dense stands it is often a stately tree with a straight, clear bole and stout, upright or spreading branches forming a narrow oblong or broad round-topped head with slender branchlets. The branchlets are light red, pea-green or orange-colored when they first appear, and become in their first winter bright reddish brown. In the open, it tends to produce a short, crooked or leaning trunk and on dry mountain slopes the tree may be no more than a twisted shrub.

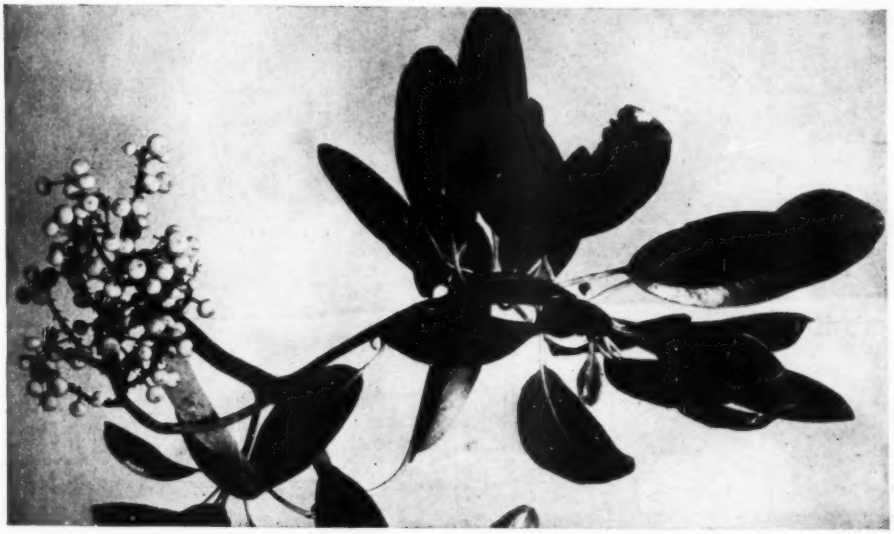


When grown in the open, Pacific Madrone, one of our most colorful trees, has a short, leaning trunk and broad crown

The thick leathery leaves are smooth, dark green and lustrous above and pale or often nearly white below, and measure from three to five inches long and one and a half to three inches wide, with a thick, pale midrib and conspicuous veinlets. They are borne on stout, grooved stems one-half to one inch long, are oval to oblong in outline, rounded or contracted into a short point at the apex, and have smooth margins which may, however, be finely to coarsely toothed on vigorous growth. When they unfold they are light green or often pink, especially on the lower surface. They remain on the tree until the early summer of their second year when they turn orange and scarlet and fall gradually and irregularly. A second crop of smaller leaves is often produced late in summer.

The small, white, bell-shaped flowers, about one-third of an inch long, appear from March to May in large, showy, nodding, terminal clusters resembling lilies-of-the-valley. Each flower develops into a small, round, bright orange-red berry-like fruit. Borne in long, loose clusters, each fruit contains several dark brown, angled seeds tightly pressed together.

Terminal buds are oval in shape



The dark green, leathery, evergreen leaves contrast sharply with the bright orange-red, berry-like fruit

Philip Palmer

with numerous scales, and the lateral buds are very small. The bark is distinctive. That of the upper stems, limbs and twigs is very thin, smooth and bright red, peeling off in irregular flakes much as in the sycamores. On older trunks, it is dark reddish brown, and covered with loose, thin plate-like scales which are shed annually.

The heartwood is a light reddish brown and the sapwood white or cream, frequently with a pinkish tinge. The wood is fine-textured, hard, heavy and moderately strong being similar in these properties to Pacific dogwood, but it has less shock resistance than the latter. A cubic foot of the air-dry wood weighs about forty-six pounds. Along with Pacific dogwood, it has been suggested for the manufacture of shuttles used for weaving cloth in place of the flowering dogwood of eastern United States.

The tree produces large quantities of seed every year. Although difficult to transplant, it is very hardy after it has become established and is often grown in yards and gardens for its bright colors. In the fall, the bunches of brilliant orange-red fruit with the slender green, red or brown twigs and the reddish older leaves, make pleasing color combinations. It is occasionally cultivated in the gardens of western and southern Europe.

The genus *Arbutus* was first defined by Linnaeus in 1754 and given the old Latin name for the common strawberry tree of southern Europe (*Arbutus unedo*). Of the 12 species, all of them confined to the northern hemisphere, two are found in Mexico and the southwestern United States, and one in the Pacific Coast. They belong to the Heath family, and are thus related to the rhododendrons, azaleas and blueberries.

The specific name was given by the Siberian-born botanist, Frederick Pursh, in honor of Archibald Menzies, who discovered and collected specimens of the tree at Port Discovery, California, in May 1792. He was the botanist of Captain Vancouver's voyage of discovery in 1790-1795. In his journals he calls it "the oriental strawberry tree" and continues, "this last grows to a small tree and was at this time a peculiar ornament to the forest by its large clusters of whitish flowers and evergreen leaves, but its peculiar smooth bark of a reddish brown color will at all times attract the notice of the most superficial observer."

Devereux Butcher

Bark on upper limbs is bright red, darkening to reddish brown on old trunks. Thin scales shed annually

Pacific Madrone grown naturally from British Columbia to Southern California

managing your WOODLANDS

A page dedicated to the management of woodlands, large and small — practical suggestions in procedure and technique and in the solution of problems on the ground.

What is your problem? American Forests will assist you in finding an answer. Address queries to The Woodlands Editor.

FORESTRY FOR THE SAWMILL OPERATOR

Here is a pattern for weaving the logger and sawmill man into the fabric of better farm woodlands

IN the production of any raw material, the question of whether or not the producer makes a profit on his effort very often hinges on what the manufacturer is able to do with it. The more efficient the manufacturer, the better chance the producer has of finding a steady market.

Wood as it comes from the woodland is a raw material. It must be processed by the sawmill and planing mill into products which the consumer is willing to buy at a fair price. It follows, therefore, that the sawmill operator is a major factor in the success or failure of woodland management.

Extension forester Donald P. Duncan of Kansas, for example, found that farmers were inclined to avoid the use of native lumber which could be produced in abundance within the state. They preferred lumber from outside the state because it was more "dependable." Native lumber had a tendency to warp and shrink in use, and local mills were able to produce, generally, only poorly-sawed boards. Unless these objections could be overcome, there would be little market for local lumber and no incentive for better management of farm woodlands.

Duncan had seen these and similar problems solved in Maryland, Minnesota and other states through the medium of "schools" for sawmill operators. In these millmen were instructed in the best methods of production —how to get the most from a log. So he decided to inaugurate "sawmill schools" in Kansas.

Duncan had another problem. As in many other areas, often the sawmill operator was also the woods operator—inclined to "high grade" the woodland, taking only the best trees. Or he might take all the trees, even the smaller ones which should be left for another cutting. In either case, the millman, as well as the woodland owner, lost money in the long run. On a "high-grading" operation, the operator would leave only the poorest trees, thus reducing his opportunity to come back to the same woodland for another quality harvest. On a clear-cutting operation, he harvested many logs which did not pay their way when run through the saw.

These problems formed the subject matter for the first sawmill schools in Kansas. Enlisted as instructors were a forester from the Soil Conservation Service, an expert millman from the Forest Products Laboratory, a farm forester, and a specialist in sawmill equipment. Cooperation from these agencies was easy to obtain since each was well aware of the problems of woodland management and utilization.

The next step was to learn from millmen themselves some of the problems on which they were most eager to obtain assistance and to work these into the teaching material at the schools.

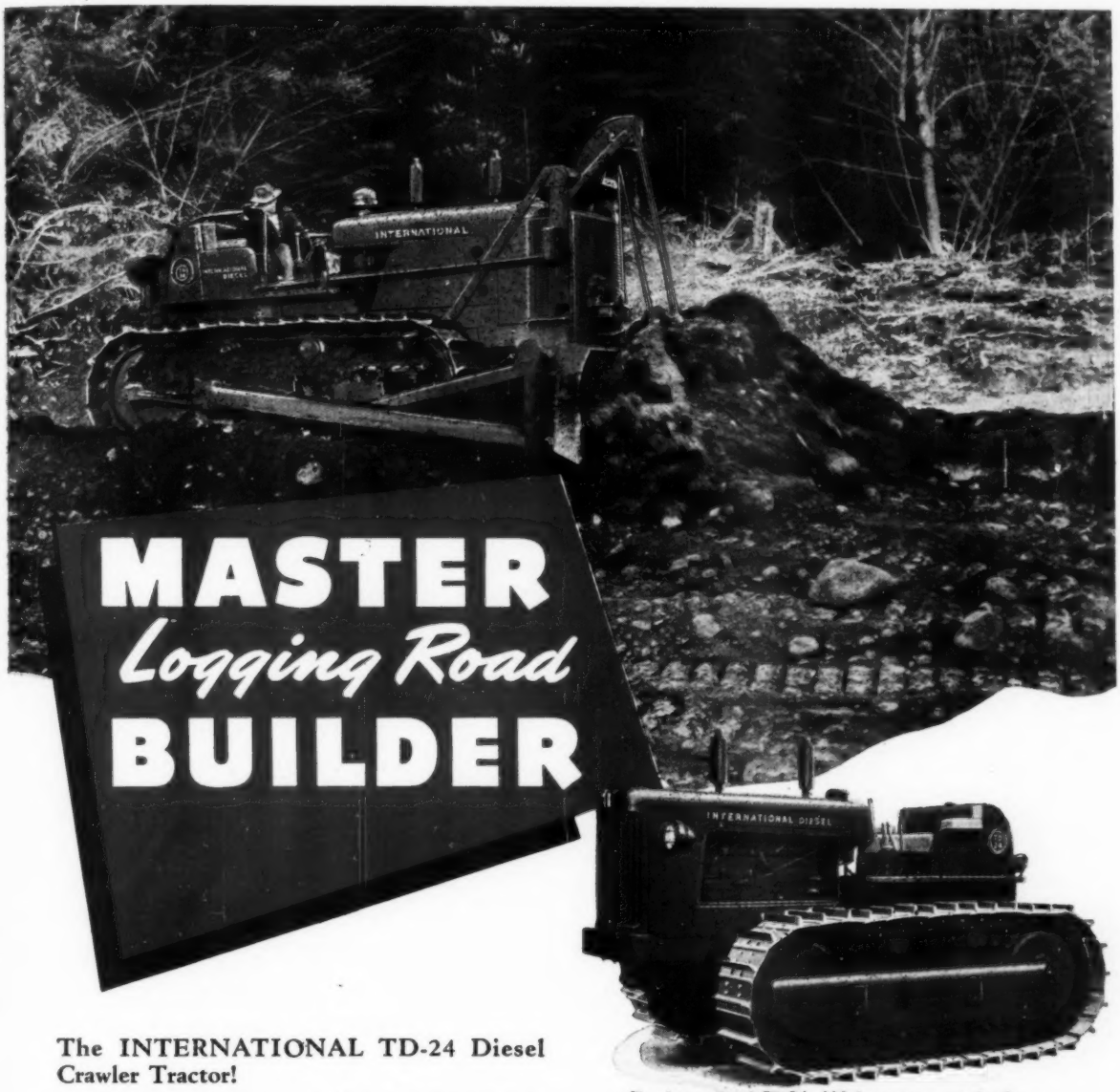
The schools were a combination of demonstration and learning by doing. The mill operators were given opportunity to try their own hands at the various methods as well as to enter

(*Turn to page* 134)

Saw hammering is demonstrated by a company expert. Better saws mean better forestry

U. S. Forest Service

A Soil Conservation Service forester shows how to eliminate warping by proper piling



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A Foundation for the Forest

(*From page* 107)

two important reports, one an analysis of the problems of private forestry in the Douglasfir region, and the other an outline of practical management possibilities. The data is proving of increasing value to both students of forestry and to owners of Douglasfir forests desirous of managing their lands for continuous crops of trees.

While it is not within the space limits of this article to mention all the projects which the Foundation has been instrumental in starting and carrying forward, the following will indicate the breadth of its activities.

Recognizing the importance of the wild and cutover land problem in northern Michigan, a four year study was made under the direction of the University of Michigan to determine land utilization trends in that region and to provide a factual guide for more productive use of the lands. A second study in the Lake States was under a fellowship awarded to C. H. Stoddard, Jr., dealing with problems faced by lumber companies lacking sufficient timber to make possible sustained-yield operations. From this study came a proposed "two-cut system" embodying a compromise between destructive liquidation and sustained yield for areas where the latter practice is rarely applicable. The plan has attracted much attention since it offers a method of forest land management that would lessen the effects which so often follow clear-cutting in the Lake States.

To further speed the progress of forestry in the vast piney woods sections of the southern states, two projects which yielded valuable material should be mentioned. One is a volume on longleaf pine, by W. G. Wahlenberg, which brings together and interprets all published and much unpublished research data concerning this important southern pine. The other is a publication issued in 1947 entitled "The Four Forests and the Future of the South," by I. F. Eldredge, which already is having a marked influence in stimulating forest interest and action throughout the South.

In 1942 the Foundation authorized a study of educational methods being used in eastern and central states to bring about better management of farm woodlands. Out of this study, which was made by Joshua A. Cope, who has worked in the farm forest field for many years, came a report entitled "Farm Forestry in the Eastern United States." Published by the Foundation in 1944, this report has become standard reference material for foresters and forest educators.

Noteworthy among cooperative projects initiated shortly after the war is a joint study by the Foundation and the Society of American Foresters. Begun in 1945, the project is a critical analysis of forest conditions in selected states and determination of standards of state administration best adapted to the development and management of forest lands as a part of the state's economic unity and welfare. At this date, studies have been completed for nine states—North Carolina, Rhode Island, Massachusetts, Kentucky, West Virginia, Tennessee, Ohio, Colorado and Idaho. In a number of the states, the more important recommendations proposed already are in course of being put into effect.

Still more recently, the Foundation has given its support to the development of an overall program of forestry that would put to fuller use available information and public interest to which it has contributed so largely. For some years Randolph Pack has been a director and vice-president of The American Forestry Association and in that capacity took an active part in the formulation of the Association's Program for American Forestry, adopted in 1947 by an almost unanimous vote of its members. The program is the outgrowth of surveys by both the Association and the U. S. Forest Service of the forest position of the United States following the war and calls for specific lines of educational action considered necessary to bring about the productive management of the nation's 656 million acres of forest land. To aid in activating and carrying forward this program, the Foundation in the spring of 1947 made a grant to the Association of $100,000, of which $25,000 was for immediate use and the remainder for later use as matched by other contributions.

A current project that characterizes the Foundation's timeliness in the selection of its projects is an investigation of the possibilities of the farm forest—a farm or small tract of land on which the main and supporting crop is trees. The study is of special urgency in view of recent findings that sixty percent of the forest land of the nation is in small holdings and that nine out of ten of the owners lack scientific knowledge of timber growing. The results of the study, it is hoped, may point the way to the most economical utilization of small tracts of land submarginal for agriculture and provide guidance to the millions of people who already own such lands or are looking forward to acquiring a few hundred acres in the country. At the same time, the study may well provide data helpful in shaping public policy involving land settlement and other measures designed to raise the standards of people living in forest areas.

In the interest of bringing about forest management on a tract of 27,000 acres owned by Dartmouth College and known as the Dartmouth grant, the Foundation offered to initiate a survey and to prepare a management plan. The survey was done in cooperation with the U. S. Forest Service and definite recommendations were made for managing the area for continuous forest production. As a result of this survey and report, a forester is now employed by the college.

Coincident with the 1937 change in policy, the Foundation broadened its contributions to forest literature. In addition to publishing the more important results of studies made by Pack Fellows, it began to extend financial aid to other agencies for the publication of material deemed of current and permanent value as sources of general and scientific knowledge of American forests. The value of this phase of its work is attested by the fact that its publications are increasingly in demand.

One of its current publication projects is the preparation of a revised issue of the "Forestry Directory," to be published early in 1949. This publication will be the fifth in a series begun in 1924, with the first Forestry Almanac. Editions published in 1929 and 1933 were called "Forestry Almanac," but with the 1943 edition the title was changed to "Forestry Directory." The book is a guide to the functions and activities of all forestry organizations in the United States, federal, state, and private, as well as to forest resources.

The Foundation's interest in the publication field has not been confined exclusively to the forests of the United States but as previously pointed out has included recognition of the fact that the maintenance of productive forests has now become a world resource problem affecting international economy, cooperation and peace. An example is the recent action of the Foundation in 1946 in

(*Turn to page* 144)

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THE ability to reach mature timber and get the logs out quickly without damaging young trees is vital to efficient selective logging. That means modern equipment plus good skid roads and haul roads.

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One of Elk River Timber Co.'s six "Caterpillar" Diesel D8s, equipped with Hyster arch, skidding 8500 bd. ft. of logs to the landing. The "Caterpillar" Bulldozer on front end is used for road building.

NEWS IN REVIEW

THE first cooperative experimental forest in second-growth Douglasfir has been established between the St. Paul and Tacoma Lumber Company and the U. S. Forest Service. The tract of thirty-five-year-old timber is located near Tacoma, Washington, on lands logged by the company years ago and restocked by seed from trees reserved for that purpose.

Under the agreement, which anticipates a cooperative twenty-year program of forest management research in silvicultural methods, wood utilization, practical thinning procedure, costs and returns, the Forest Service will prepare working plans and lay out experimental timber cuttings on company lands and analyze results. Findings will be made available to other timberland owners. Timber cutting will be under the direction of the Pacific Northwest Forest Experiment Station. Actual logging operations will be conducted by the company under direction of its forester, Norman G. Jacobson, who has already pioneered in the development of logging methods adapted to second-growth timber.

• • • •

The first sustained-yield unit composed entirely of publicly-owned forest land has been established on 73,600 acres of the Carson National Forest in New Mexico. The unit is planned to assure increased and sustained supply of national forest timber for manufacture in the area. It is expected that employment opportunities in woods and mill work will be increased by 400 percent. The timber will be cut at the rate of 1,500,000 board feet a year. For the first thirty years, cutting will be confined to 27,000 acres of virgin stands. In the meantime, it is expected that young timber now growing on other areas, which were cut over thirty-five years ago, will be ready for cutting operation.

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Forest practice rules for each of the four California forest districts have been published by the California Department of Natural Resources. This is the culmination of work started in 1945 when the state legislature declared that regulations were needed and that industry itself could best determine what practical actions should be taken to leave land in productive condition and to protect future timber crops from fire, insects and disease. The resultant regulations prepared by committees of landowners and operators were given the force of law in April, 1947. Specific rules apply to each district—redwood, north Sierra pine, south Sierra pine and Coast Range pine and fir.

• • • •

Net receipts from the operation of the 153 national forests for the six-month period from July 1 to December 31, 1947, totaled $11,223,308—the largest amount ever earned by the national forests in any similar period.

More than ninety percent of the receipts came from the sale of timber. The average value of timber cut was $5.15 a thousand board feet as compared with $4.28 in the corresponding period of 1946.

Livestock owners who grazed cattle, horses, sheep and goats on the national forests paid a total of $313,538—a decrease of $7,000 from the same period of 1946. Waterpower rentals contributed $27,200.

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The St. Regis Paper Company has announced the appointment of A. B. Recknagel as technical director of forestry activities. Mr. Recknagel, a forester of long experience, has in recent years served as acting head of the forestry department of the University of British Columbia, Vancouver. He was formerly professor of forest management and utilization at Cornell University — and later headed the forestry department there.

American Studio

A. B. Recknagel
Named St. Regis forester

• • • •

Deferment of taxes on forest growth on privately owned lands until the trees are cut and marked is called for in a bill now before the New York State Legislature. The bill provides for assumption by the state of such taxes, pending a yield tax to be levied on the owner at the time of harvest. Thus the localities would continue to receive normal tax revenues while owners of forest or farm woodland would be relieved of the taxes on their forest growth during the immaturity of the crop. When the timber or other forest crop is marketed, the bill provides for the collection of a six percent yield tax.

• • • •

The Georgia State Forestry Department has announced the establishment of a new 100-acre seedling nursery which will make Georgia the largest tree-producing state in the nation. A. R. Shirley, director of the department, said the new nursery would more than double seedling production. An estimated forty-five million trees will be produced for distribution next year to farmers and landowners of the state.

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National Wildlife Week this year will begin on March 21, and marks the start of the second decade of such observations sponsored by the National Wildlife Federation.

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The importance of aspen to the Lake States pulpwood industry is brought out by a survey recently made by the U. S. Forest Service. In 1946, aspen accounted for about a third of the total regional pulpwood production of two and a quarter million cords, and the first time on record became the principal pulpwood species of the region. In 1936, only about ninety thousand cords of aspen pulpwood were produced in the Lake States.

• • • •

Timber felling in the United States zone of Germany during the 1947 cutting year increased ten percent as compared with that of the preceding year. The actual cut was 5,090,250,000 board feet—the planned cut 5,795,500,000 feet.

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Watts Urges Watershed Protection Program

NATIONWIDE support for a program to intensify good forest and range management on highland watersheds is urged by Lyle F. Watts, chief of the U. S. Forest Service, in his annual report.

"We are paying a huge price every year for our failure to give enough care to the highlands that water our valleys," he said. "Most of our watershed forests and ranges can be managed to provide good water-flow conditions along with timber production, livestock grazing, recreation and other values." There are certain critical areas, however, where specialized treatment is needed, he declared, and a considerable area where tree planting or reseeding to grasses is necessary.

The report calls for more upstream flood control surveys and prompt corrective action on such measures as reforestation, revegetation, changes in land uses, upstream engineering and intensified fire control.

The chief forester asserted that federal, state, or community management is often best for critical flood source and water supply areas where individual owners cannot afford to undertake the measures demanded by the public welfare. On the other hand, while the national forest watersheds provide all or most of the water for more than 1,000 cities, for 21,000,000 acres under irrigation in seventeen states, and for more than 400 power projects, Forest Service forces are spread thin over large areas, and there is obvious need for more intensive management on many national forests.

He stated that because of the national water situation, timber management and cutting practices that maintain continuous tree growth and keep soil in place must be applied on all timberland. The report calls again for public controls to bar destructive timber cutting; more aids to good timber management practice by private owners; and intensified control of fires and destructive forest insects and disease. Also called for are "stepping up" planting and reseeding programs for depleted forest and range lands.

The public range controversy is discussed as a special watershed problem. About half the national forests' 80,000,000 acres of range has been overgrazed. The service is improving range conditions by reseeding, better management of livestock, range improvements, elimination of rodents and poisonous plants, and other means—with reductions in numbers of grazing animals where other measures would be inadequate.

Letters

(*From page* 100)

nities had relied upon a situation which they believed stable and was upset because one department of Government permitted a dream of a large wilderness area or perhaps a monument to his term of office, to overshadow the lives of those who had pioneered the country, built their homes and their factories and were then working out a program to perpetuate these communities and build a stable future.

The record will show that if the park had been of the size recommended by the surveys made by national park representatives, the economy of the Olympic Peninsula would not have been disrupted.

No man can tell what future generations may wish. They may decide that national parks as a whole should be abolished, or they may decide that they all should be enlarged. That is something which the future will determine. As far as the Olympic National Park is concerned, the record of the people of the Olympic Peninsula is an active living refutation of any argument that they will ask for any further elimination if the boundaries as they feel are proper should be adopted, or if an unbiased fact-finding commission should make a proper survey and recommend an elimination, which would work to the benefit of all concerned. The record shows that these people want a substantial national park—but they are vitally concerned and must oppose a plan which completely disrupts the economic stability of the communities founded on long range planning.

The controversy regarding the boundaries of the Olympic National Park will never be settled until an unbiased study is made of the area by competent persons and their recommendations enacted in the law by Congress. There should be no objection by anyone for the creation of such a commission as proposed in H. R. 4053, now before Congress.—*Andrew Severyns*, attorney, Port Angeles, Washington, and *Lester T. Parker*, attorney, Aberdeen, Washington.

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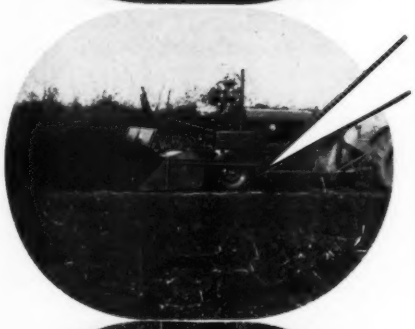

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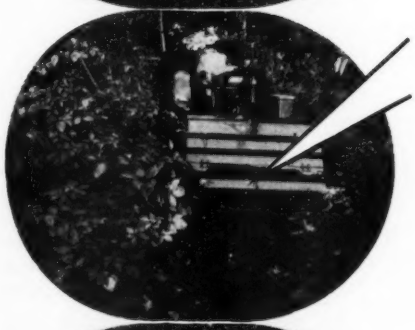

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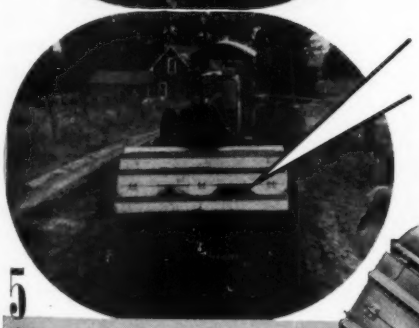

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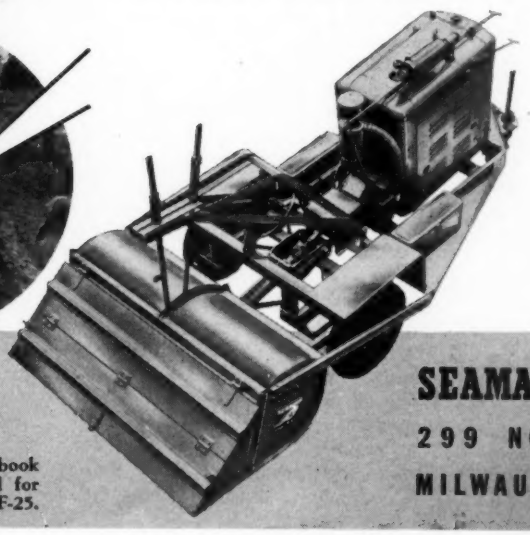

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CONSERVATION IN CONGRESS

—By A. G. HALL—

AS we go to press, the House Appropriations Committee is considering the budget for fiscal year 1949. Government witnesses have been heard on all Agriculture Department items and on some Interior Department items. The committee hopes to have an Agricultural Appropriations bill prepared by March 1. Government testimony was sympathetically received, but it is feared that efforts to slash federal expenditures in order to reduce taxes will result in some paring of conservation funds.

A stumbling block in national park administration may be eliminated if S. 2132, introduced by Senator Butler (Nebraska) on February 5, becomes law. It provides for payments to states in lieu of taxes on national park and monument land. Following the Forest Service pattern, the bill would authorize payment of 25 percent of gross receipts from lands primarily under the jurisdiction of the Park Service. However, the bill stipulates that in no case shall such payments exceed 40 percent of revenues derived by the counties. It also provides for a national park land commission for approving land acquisition, and authorizes an appropriation of $20,000,000, available at the rate of $1,250,000 a year for the purchase of private lands within park and monument boundaries.

Lack of payment to local governments has been one of the reasons for local opposition to the Jackson Hole National Monument in Wyoming. Representative Barrett's (Wyoming) bill, H.R. 1330, to abolish the monument was killed in the House on January 19 when objection was raised for the second time when it was called on the consent calendar. Under the rules of the House, the bill was stricken from the calendar. However, S. 1951, with similar intent, but with slightly different boundary adjustments, was introduced by Senator Robinson (Wyoming) on January 7.

Objections raised on the consent calendar also defeated Congressman Bates' (Massachusetts) bill, H.R. 4108, to reduce the size of the Parker River National Wildlife Refuge in Massachusetts. The bill hit its first snag on January 19 when the first objections were raised. It was blocked on February 3 when objected to for the second time. Two other bills, however, affect this refuge. H.R. 3578 would eliminate three isolated tracts from the refuge. This is a compromise measure which is expected to be reported favorably by the Public Lands Committee. The other, H.R. 3487, to abolish the refuge entirely, apparently has little chance of being considered.

On February 3, the House Public Lands Committee reported favorably on Representative D'Ewart's (Montana) bill, H.R. 4980, to authorize the Secretary of the Interior to acquire state lands within the boundaries of Glacier National Park.

Enlargement of the Caribou National Forest in Idaho is being sought by Senator Dworshak (Idaho) in S. 1037, introduced last April. The bill was favorably reported (Report No. 877) by the Committee on Interior and Insular Affairs, and passed by the Senate with minor amendments on February 9. It provides for additions of around 71,000 acres to the forest, 54,000 acres of which are in private ownership and may be purchased at an average cost of $5 an acre. The other lands to be added are now in federal or state ownership.

The Committee on Interior and Insular Affairs mentioned above is the re-named Senate Committee on Public Lands—the result of the passage of Senate Resolution 179.

An interim report (No. 852) of the Special Committee to Study Problems of American Small Business indicates that although the Tongass National Forest in Alaska offers a tremendous source of wood for pulp and paper manufacture, lack of transportation facilities will result in little production before the spring of 1951. The report also points to potential dangers to the fishing industry if logging and mill wastes are permitted to pollute or disturb stream beds. Plans developed by the Fish and Wildlife Service and the Forest Service will eliminate this hazard if followed.

H.R. 5049, to reopen the revested Oregon and California Railroad and the reconveyed Coos Bay Wagon Road grant lands to exploration, location, entry and disposition under the general mining laws was reported favorably (Report No. 1373) by the House Public Lands Committee on February 12.

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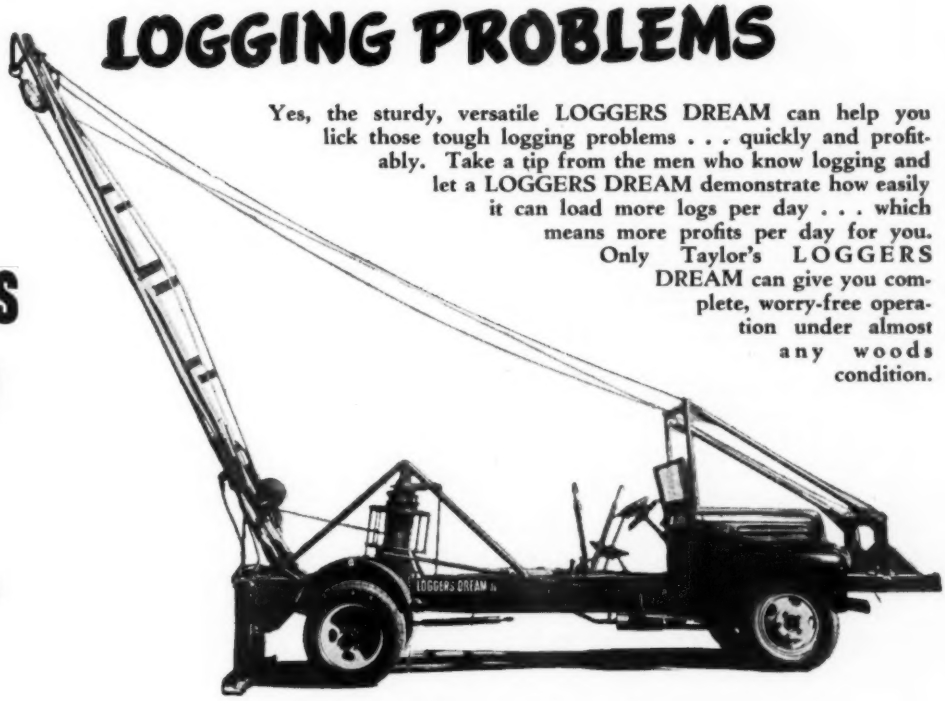

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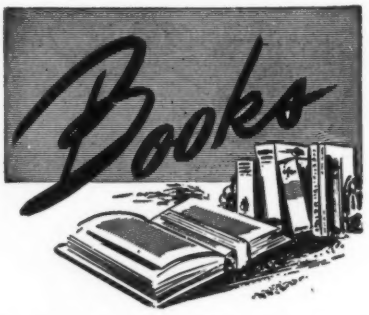

TIMBER ENGINEERS' HANDBOOK, edited by Howard J. Hansen. Published by John Wiley and Sons, Inc., New York City. 882 pages, illus. Price $10.

Bringing under one cover the latest information necessary to the design of wood structures, this handbook is a ready reference for the designing engineer and an excellent source of reference for courses in timber engineering. In its twenty chapters, each supported by illustrations and tabular presentations of essential data, it covers all the woods in use in the United States.

More than half the book is devoted to safe loads for beams of all sizes, based on current stress recommendations of the National Lumber Manufacturers' Association.

The author is chairman of the committee on timber structures, A.S.C.E., and at present professor of mechanics at the University of Florida.

GUIDE TO INFORMATION ABOUT SWEDEN, by Naboth Hedin. Published by The American Swedish News Exchange, Inc., New York City 20. 61 pages. Price 25 cents.

This is a compilation of references to books and articles on the resources, economics, social life and culture of Sweden, arranged systematically according to subject matter. The listing is confined to material written in English, and is an excellent guide for the student, businessman and author.

ELEMENTS OF SOIL CONSERVATION, by Hugh Hammond Bennett. Published by McGraw-Hill Book Company, New York City 18. 406 pages, illus. Price $3.20.

Soil conservation is the youngest of the agricultural sciences. Consequently very few books suitable for a comprehensive study of the subject or for use as texts for students have been published. In this new text, the chief of the U. S. Soil Conservation Service presents the problems of soil erosion and soil exhaustion and tested methods of solving soil problems through modern techniques. Questions providing material for classroom discussion follow each chapter and the book contains a helpful list of correlated visual aids—motion pictures and film strips.

THE FLAME BIRDS, by Robert Porter Allen. Published by Dodd, Mead and Company, New York City. 333 pages, illus. Price $3.50.

This is a popularly written account of the author's scientific quest of the roseate spoonbill, which has returned to the jungle-like environment of the Florida Bay and Texas Gulf regions. Colonies of the inordinately shy pink birds were discovered and studied, and the adventures of the author and his companion and what they learned regarding the hitherto unknown behavior of this rare species of bird life make an entertaining and informative story.

Woodland Management

(*From page* 124)

into the discussions of the subject matter. They were shown how to pile native lumber for seasoning so as to reduce warping and shrinking in use, woods practices were discussed with particular emphasis on leaving productive woodlands following logging, and methods of sawing to eliminate waste were demonstrated.

Experience has shown Duncan that follow-up material is desirable to help carry the benefits of the schools through the year. Each "student" is put on a mailing list to receive publications and bulletins dealing with mill operations and woods practice.

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For information regarding the establishment of such schools, readers are urged to get in touch with their state extension foresters or local farm forester.

WILEY books on Forestry

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The Case of the Public Range

(*From page* 118)

cost. There will be no unnecessary duplication of work, the livestock industry will be saved from year to year unnecessary expansion of the administrative unit, and best of all there will be real cooperation in the future in determining policies to be followed. I wonder if it is not time that someone took a searching look at the appropriations for the Forest Service. Perhaps it too could be boiled down considerably so that there would be fewer swivel-chair experts and more men out in the field doing a constructive job of range management and range improvement."

Mr. Watts, in his reply, stated, "It is important to keep in mind a basic principle that must be observed wherever a public resource is involved—the principle that people who use such public resources are exercising a privilege and not an absolute right to the exclusion of others. This is much the same whether public lands, public roads, public streams, or other state or federal property is involved."

Encouraged by the success with which the locks of Samson had been trimmed from the head of the helpless Grazing Service, the livestock industry was ready for the next customer.

Vigorous, continued and unrestrained clamor in opposition to necessary reductions in livestock proposed by the Forest Service, such as was published in the *National Wool Grower* of November 1946, finally led to a rebuttal by John C. Spencer, U. S. regional forester at Denver Colorado, an outstanding administrator imbued with the traditions of fairness to all public interests through his thirty-six years of service. In an address before a meeting of the Committee on Livestock and Agriculture of the Denver Chamber of Commerce he said: "During the past two years there has been a veritable broadside of criticism from certain segments of the public aimed at Forest Service grazing policies throughout the western states. This criticism has originated largely with those representing themselves as spokesmen for the livestock industry. At the same time and in these same western states, there is being fomented a movement to transfer most of the federally-owned lands initially to the several states, and ultimately to private ownership. The connection and pattern is perfectly obvious. Many individuals, in fact, have publicly criticized Forest Service range management methods, then used their own criticisms as an argument for the private acquisition of lands now belonging to the nation."

He then outlined the interlocking public interests at stake in the control of overgrazing, emphasizing the importance of the stockmen's own interest in the preservation of the range and the building up of carrying capacity by wise regulation of use. With considerable forthrightness Spencer designated the intemperate statements which had occasioned his talk as the utterances of "rabble rousers." The livestock interests seized on this phrase as an insult and brought pressure to bear for Spencer's dismissal. But public interest was aroused—and Spencer is still on the job. Demands were then formulated by the stockmen for a congressional investigation of the Forest Service.

The U. S. Chamber of Commerce was enlisted in this drive to secure private title to the grazing lands. Included in an amendment to a policy statement on public lands issued in 1946, were these words: ". . . in order to attain the highest use and fullest conservation of the grazing resources of public lands, private ownership should be re-established as the ultimate objective in government land policy."

Typical of the opposition to this was the following statement issued by the Ogden, Utah, Chamber of Commerce: "A dismal experience endured by our community reveals that livestock interests can't be depended upon to treat grazing lands in a manner that safeguards neighboring communities from alternate flood and drought. In recent years we were required in self protection to purchase privately-owned grazing lands in the mountain east of our city and to give these lands to the federal government so the Forest Service could control and correct erosion caused by overgrazing, a condition threatening the security of our water supply. Our community will perish if our watersheds are destroyed."

The stockmen's line of action on the last bastion of range conservation in the West became clear in January 1947, during the annual convention of the National Livestock Association at Phoenix, Arizona. In a resolution bitterly attacking the Forest Service, the convention called for (1) a congressional investigation of the administration of national forest grazing lands, (2) a moratorium on reductions in livestock permits until the investigation was completed, (3) preparation of legislation for congressional enactment "to provide a survey of forest lands and the transfer of these lands chiefly valuable for grazing to the Taylor Grazing Service," and (4) that lands "so transferred shall carry the existing preferences of lease or permit and be subject to all the provisions of the Taylor Act for lease and sale."

The Forest Service was accused by the stockmen of "subterfuge of range protection" in making cuts or transfers of permits and of being a "self-made, self-interpreted and self-executed type of bureaucratic administration . . . a detriment to our form of government in causing widespread dissatisfaction among forest permittees."

Following the precedent established in the West during the investigation of 1926, the only testimony which was given emphasis during the hearings conducted last summer by a subcommittee of the House Public Lands Committee, headed by Representative Frank A. Barrett of Wyoming, was that inimical to the Forest Service control of grazing.

Congressional inquiries such as these are intended to produce a program for the guidance of Congress. Perhaps Senator Robertson of Utah, was premature when, in his bill, S. 1945, introduced but not passed in the last Congress, he proposed that commissions be appointed from each state whose duty it would be to determine with reference to all publicly owned lands (national forests, grazing lands and all other categories) what lands were primarily valuable for grazing. These lands were then to be ceded to the states or sold to private owners. This position was reiterated on September 4, 1947, by Governor Hunt of Wyoming.

Legislation was introduced in the 80th Congress by Senator Pat McCarran of Nevada (S. 28), to make the director and associate director of the grazing branch of the Bureau of Land Management a political appointee subject to confirmation by the Senate, in order once and for all to prevent the Grazing Service of the Department of the Interior from exercising the independence of political pressure which has enabled it to protect public interests against pri-

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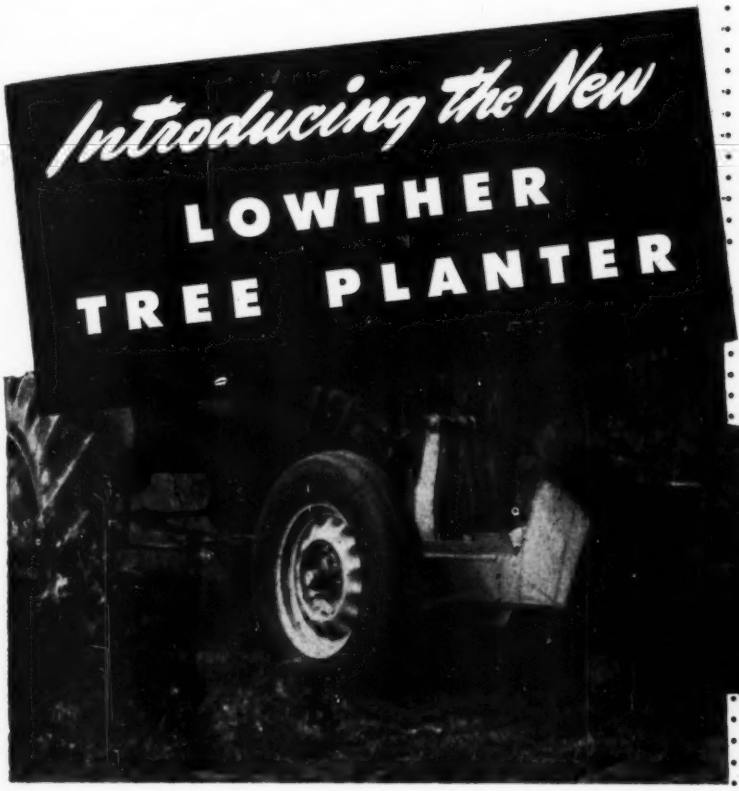

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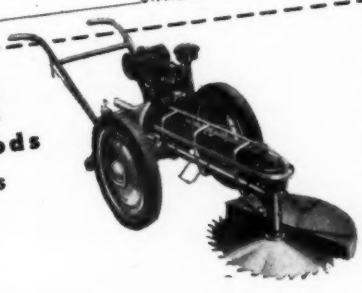

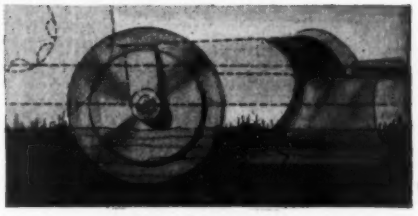

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vate greed. This same bill re-establishes the discontinued local offices of Registers of the General Land Office, perhaps to take care of the contemplated future dispositions of the public domain to private purchasers. This bill was unanimously approved by the Senate Committee on Public lands on May 13, 1947, Senate Report 165, despite the fact that it was disapproved by both the Bureau of the Budget and by Undersecretary of the Interior, Oscar L. Chapman, the only two federal agencies which reported on it. Both agencies upheld the principle that secretarial appointments for merit were indispensable in securing sound technical administration of natural resources.

This is only one of the new bills already introduced by Senator McCarran for his committee. S. 2 would divert ten percent of the total receipts from all sources of national forest income for range improvements within such forests in the states where the revenue was produced. This would give the stockmen in Oregon and Washington quite a lift in a region whose chief resource is the heavy stands of Douglasfir timber. S. 31 would amend the Taylor Grazing Act by giving absolute power to the advisory boards within each grazing district to veto any increase in the grazing fees proposed by the Secretary of the Interior. No chances are being taken in this matter. Private control by the stockmen of the amount of the fees must be assured.

In S. 34 power is given to sixty percent, by number, of the properly qualified users of any grazing district to secure upon petition the dissolution of the district or of any portion of it. Decision as to other public interests which might be prejudiced by this abandonment of regulatory control is thus to be entrusted to the stockmen.

The text of the hearings held by Mr. Barrett's committee this summer were not published and probably never will be exposed to public perusal and analysis. But on Oct. 8, 1947, this committee "summed up" its study by making six proposals to Secretary of Agriculture Clinton Anderson for changes in administrative procedure and regulation. Of these, four were capable of acceptance, but the remaining two were denied by the Secretary as being contrary to public interests. Of these, one reads as follows: "Effective immediately and extending for a three-year 'test' period, there shall be no reductions made in permits." This measure would deprive the public of protection against erosion of crucial areas. Furthermore, the Secretary brought out that the actual reductions so bitterly complained of by selected witnesses amounted in 1948, for all national forests, to but seven-tenths of one percent for cattle and 3.8 percent for sheep, while for 1949 cattle would be reduced but 2.8 percent and sheep 3 percent, and for 1950 cattle 3.8 percent and sheep 3.2 percent.

The second proposal rejected by the Secretary would "establish and put into operation a system of impartial appeal boards designed to represent fully the interests of the general public as well as the permittees and the Forest Service so far as grazing and livestock operations are concerned."

The Secretary rightly stated that the intention of such a regulation was to set up boards with authority for final decisions relating to the government's own property, the public range. *Advisory* boards as they now exist—yes. But boards with governmental powers—that is a different story. Were the stockmen to succeed in securing this one concession, either by administrative ruling or by the passage of a congressional act, the power which they seek would pass from the people to the livestock interests.

Meanwhile, a report on the western range policies was issued by one Rex L. Nicholson in July 1946, in which, with the practically unanimous support of western livestock interests, the recommendation was made that grazing fees per cow month should be raised from five to eight cents, but that legislation should be enacted by the Congress which would establish the principle that fees should be "reasonable" and "shall take into account the extent to which such districts yield public benefits over and above those accruing to the users of the forage resources for livestock purposes." This law was enacted on Aug. 6, 1947, as Public Law 376, 80th Congress, and the increases in grazing fees were put into effect.

What does this mean? Throughout the report and the debate on this bill the principle was emphasized that the charge for grazing should be based solely on returning the cost of administration without any consideration of the value of the forage. Stockmen were quite willing to pay three cents more per cow a month on the range as the price of embodying this "guiding principle" in the law of the land. Meanwhile, on the national forests, all commercial resources includ-

ing forage continue to be sold at their true market value. It then happens that the same stockmen who pay eight cents for a cow on the public domain are paying a little over thirty-six cents for the same animal when it crosses the line into a national forest. Does this explain the motive behind the drive against Forest Service personnel and policies?

Looking at the situation squarely, the problem resolves itself to this: either these grazing lands of the West must be conserved, retained as national property, and their cover restored by an efficient, non-political federal service, or else they may as well be abandoned to the control of the special interest represented by the livestock industry, regardless of the consequences. Is the nation—and particularly the West—prepared to accept this alternative?

In October, 1944, a Committee on Postwar Agricultural Policy of the Association of Land Grant Colleges and Universities issued a report in which this statement appears: "It is necessary to unify the responsibility for the use, management, and conservation of federal grazing lands by placing their supervision under one organization of the federal government." But the committee, in its report and personally, refrained from indicating a choice as to the agency which should shoulder the responsibility.

In May, 1926, during the controversy over Senator Stanfield's proposals, the writer published an article in the *Journal of Forestry* in which he drew certain conclusions as to the policies which should guide the future disposition of our remaining public lands. The experience of the last twenty years appears to justify a repetition of his concluding paragraph:

"If any lesson is to be drawn from this situation it is the need for public opinion to demand a rational solution of the policy of future use of our public domain regardless of departmental precedent or desires. This question will not be settled by merely taking the lines of least resistance, saddling the Interior Department with new and unfamiliar duties and at the same time creating duplicating bureaus of grazing in two departments on adjoining public areas. Grazing administration will be put on a sound basis only when it is placed in the Department of Agriculture where all existing similar work has been developed and is now carried on."

Do these conclusions still hold good?

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Why Emil Planted Trees

(*From page* 119)

"Now look close," he said, his voice speeding up with excitement. "I wrap the comb about the bud—like this."

The uncut edge was coiled around his index finger, giving it the appearance of a small head wearing a tall crown. Deliberately he bent the crown points outward from the center, to about a 30-degree angle. Holding the protected finger straight up, Emil extended his hand to within a few inches of my face.

"Now," he said, and his teeth remained tightly clenched as he finished the sentence, "Let me see some deer eat that!"

All winter, Emil had been collecting scraps of tin—old snuff signs and tobacco signs, large cans—anything that would make a protective comb for his trees. In his spare time he had been manufacturing the combs, as testified by several cardboard boxes full which he hauled out to show us.

"But you have to put them on every fall and take them off again in the spring, every year, don't you?" I asked.

"Not every year," he smiled. "Just till the buds get high enough so the deer don't reach them."

Here was a man to whom tree planting was a purpose in life. But why should a fellow, well along in his fifty's, be planting trees that could not possibly be of much use to him in his lifetime? Why hadn't he done as many others had done when the deer blasted their hopes? What kept his hope alive?

Emil's answer came quickly, "I have two sons."

Maple Syrup—Luxury Product

(*From page* 110)

once the lid has been screwed on the can at the boiling house—$5 to $6.50. Half-gallon cans sold for $3.50 to $4.50, and quarts for $2 to $3 at the farm.

As one drives along U. S. Highway 7, approaching Danville Green, in northern Vermont, there is a neat appearing farmhouse beside the road, with a painted sign announcing "Maple Syrup for Sale." The widow-woman who owns the place and operates a successful dairy, has sold more than 800 gallons of maple syrup since last April, mostly to tourists who stopped and picked up the goods themselves. The cash value of these sales amounted to about $5,500!

Of course the owner did not produce all this merchandise; actually she bought about two-thirds of the volume sold from her neighbors who lived off the paved highway, and whose reputations for making good products were well known to her. In the past year, her experience, and that of most other farmers and country merchants, has indicated that maple sugar, or at least maple syrup, has become a luxury item. All that is required to sell it at a high price is to devise ways of letting the public know how and where it can be obtained. The ubiquitous tourist, with his well-known penchant for living off the country—paying through the nose while so doing—probably offers the surest promise of continued prosperity among sugar makers.

In Boston the other day a friend discussed with an economist employed by the Federal Reserve Bank the question of probable price trends in the field of maple products. The economist said he regarded maple syrup as being much like cranberries—a luxury article liked by just about everybody, capable of being produced in tremendous volume, yet by reason of costs and difficulties of production, always in short supply. Therefore, he looked for fair to high prices for both to be maintained.

So let us watch for the first real thaw of March, and when it arrives, let us fare forth into the sugar bush with sledge loads of freshly scalded buckets, covers and spouts. In former years one of the most onerous tasks was to bore the tapholes, with brace and bit; this year one can buy a portable gas engine-driven tapping machine which cuts the time to a few seconds at each tree instead of three or four minutes. When the sap begins to run we shall need to use a horse team for gathering, for this phase of sugaring does not lend itself to mechanization. As Uncle Ed used to remark, with mild disgust, "You scatter buckets and begin gathering sap, with snow up to the britchin' on a tall hoss, but by the

time you get done the mud is two feet deep."

Part of the cost of good maple syrup is unsparing cleanliness—carefully scalded buckets, spouts, covers, evaporator pans and all tanks and other containers. Trees must be tapped anew each year, and after a week of thawing weather one should ream out all tapholes with a bit to remove mould fungi which otherwise would darken the color of the product. Sap must be gathered promptly and boiled as soon as possible, since it tends to sour quickly when temperatures are mild.

Cans and boiling equipment should be tin-plate but never made of terne plate, since this material contains lead, which may get into the product and ruin its marketability. Tanks and buckets may be made of galvanized iron. In addition to the thermometer, such as Uncle Ed used, your modern sugar maker has a Beaume hygrometer with which he can ascertain the exact point at which boiling syrup will cool to weigh exactly eleven pounds a gallon. When that point is reached he pours the hot liquid directly into cans of desired capacity, screws covers on tightly, and his product is ready for the market.

If a user in Washington or some other warmish city fails to keep an opened can of maple syrup in his refrigerator the contents will become mouldy. All he need do in such a contingency is to place the syrup in a saucepan, bring to a boil and skim away the mould froth. The container should be scalded out if it is to be used again, but the syrup is as good as ever, albeit slightly different in flavor. These flavor variations are indistinguishable by you or me. In fact, the differences in taste as between light colored and dark maple products are matters for the experts to argue about. In our book maple syrup—or sugar—always is good, regardless of color. And anyone owning 200 or more tappable maple trees in the northern section of New York or New England can have a lot of fun and make a bit of cash by sugaring.

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Connecticut

(*From page* 121)

Ten percent of forest land is state owned. As elsewhere in the Northeast, such ownership tends to follow public pressure—the lands becoming playgrounds rather than demonstrations of multiple use forestry. Barring this, they are well managed. Seven hundred thousand acres are held by farmers and are usually handled by the savings' bank method. Their trees are sold off for a lump sum as economic pressure warrants and neglected between times. Farm foresters have made a dent in this custom, but only a dent.

Fifty-nine percent of the forest ownership comes under the heading of "corporations, estates, and institutions." About this class it is difficult to make generalizations. The 22,000 acres of the New Haven Water Company are under expert care, and the same is true of the Yale Forest at Union. But the great uncertainty with estates is that their ownership is unstable. It is a Connecticut custom for land to change hands every generation or so. If the land were held for its timber growing possibilities this probably would not be the case. But lands are held for other reasons; and unless some special effort is made to develop them they probably eat up more in taxes than they supply in revenue. The owner dies, moves away, or loses interest; and the woodlot remains to suffer.

To assume that under such form of ownership trees can be grown on a hundred year rotation is an illusion. Nor will the view be expressed here that anyone can grow hardwood sawlogs from seedlings and sprouts at a profit. The best that can be done is to make intelligent use of what is growing, and thereby contribute most fully to the welfare of the people.

One scheme proposed for this end is for the federal government to acquire by lease or purchase all woodlots and manage them, on the theory that only it can afford the money and the time. Another choice is to hound and harass the landowner with laws and threats—a plan, in Connecticut, only slightly more unpopular than it is futile. A third alternative is to make the management of a woodlot a profitable business, whose reward is not freedom from jail but extra money in the pocket.

The Forest and Park Association has made the last choice its chief concern and has organized the forest cooperative known as Connwood. The program consists in developing new and better markets for low-grade hardwoods. Most of the lumber needed will always have to be imported; but the diverse industries create many specialized uses. The charcoal industry has hung on as an adjunct of the brick and brass factories, and the redesigning of kilns could bring it back into prominence. Hydrolysis of wood for fertilizer and cattle feed is still in the experimental stage; but if it can be done cheaply enough a large market will have been created. Fuelwood has remained important and became increasingly so during the war. A woodburning stove, as cheap and as efficient as a coal furnace, has been designed and put on the market.

However the most promising outlet for low-grade hardwoods is pulpwood. The announcement made in April, 1945, that these were acceptable to a New York mill made every woodlot owner a potential logger. Connwood now ships sixty cords a week; and hopes eventually to extend its marketing service to cover all types

Financial Statement

The American Forestry Association

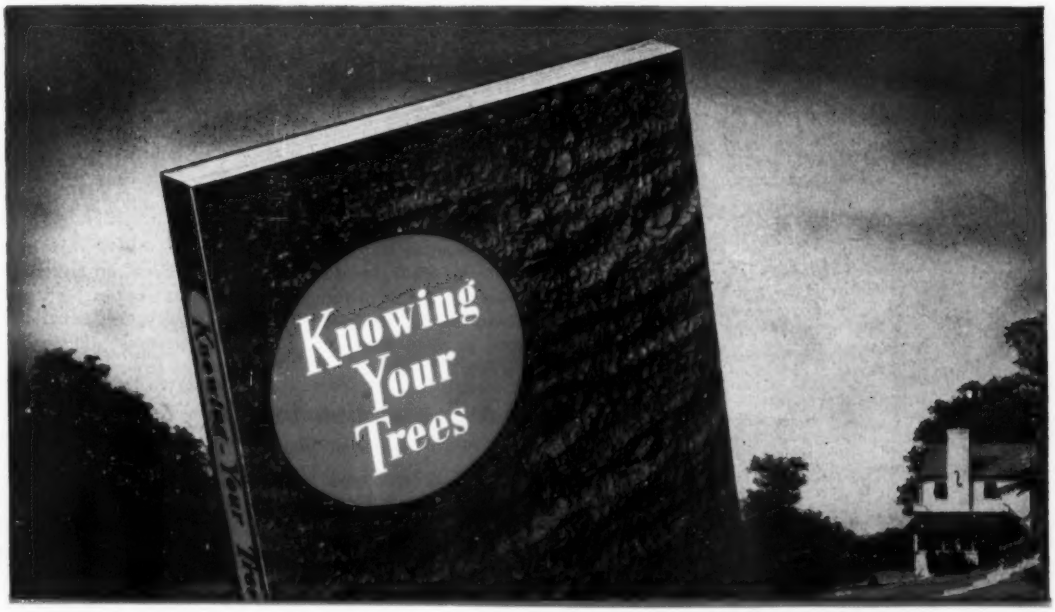
BALANCE SHEET AS AT DECEMBER 31, 1947

ASSETS		LIABILITIES AND SURPLUS	
Cash	$27,285.89	Accounts Payable	$ 16,674.40
Accounts Receivable	3,748.28	Deferred Income	48,872.11
Accrued Interest Receivable	319.24	Reserve for Retirement Insurance and Forest Program	19,703.54
Inventories	10,715.67	Surplus	262,523.14
Deferred Charges	3,843.90		
Endowment Fund (Including Real Estate	298,547.40		
Furniture and Equipment	3,312.81		
TOTAL	$347,773.19	TOTAL	$347,773.19

INCOME AND EXPENSE ACCOUNT FOR THE SEVEN MONTHS PERIOD ENDING DECEMBER 31, 1947*

EXPENSE		INCOME	
General Administration	$19,409.51	Membership Dues	$40,297.68
American Forests Magazine	33,623.77	Advertising	12,094.63
Membership	18,475.43	Interest	5,433.98
Forester's Office	6,324.31	Donations	5,028.25
		Miscellaneous	3,001.29
		Forester's Office	151.00
		Sale of Publications	1,722.30
		Operating Deficit	10,103.89
TOTAL	$77,833.02	TOTAL	$77,833.02

*On January 20, 1947 the Directors changed the operation of the Association from a fiscal to a calendar year. Therefore the next statement will be for the full year of 1948.



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of wood products. Connwood will refuse to serve whomever fails to follow good cutting practices, and thus hopes to avoid the paradox that good markets inevitably lead to forest devastation. Apparently the ingenuity and vision of the frontier live on as Connecticut seeks to use what her pioneers feared and destroyed.

In his 1945 report the Chief of the United States Forest Service called for legislation to keep forest lands "reasonably productive." Are Connecticut's 1,907,000 acres of woodland "reasonably productive"? The most acute problem is what to do with the 300,000 cords of low-grade hardwood that grows every year and were better removed in thinnings. In addition, there is a net increase of 75 million board feet in volume and three thousand acres in area each year. Growth rates cannot be compared to those of southern pine or Douglasfir types, since an annual increment of 150 board feet to the acre is a good average for oak. But quality aside and considering their history, Connecticut's forests are more than reasonably productive; they are almost embarrassingly so.

Along with the gain in area and volume is a gain in esteem that is harder to measure. More and more citizens seek the rural districts for healthful recreation and living. There they come in contact with the forest and gradually recognize it for what it is—the greatest natural beauty and resource of their rocky little state.

A Foundation for the Forest

(*From page* 126)

making available to the forestry committee of the United Nations' Commission on Food and Agriculture the services of its secretary, Tom Gill, to assist in the preparation of the committee's report on the world forest situation. As a part of this assistance, the Foundation later underwrote the printing and distribution of 20,000 copies of the report in order that its world findings might be more widely available.

In this connection mention should be made of an inter-American project carried out in cooperation with the Tropical Plant Research Foundation. This was a survey by Tom Gill of the forest resources of the Caribbean countries. The study covered a period of three years and brought together little known facts about forest resources to our south that seem destined to play an increasingly important role in the forest economy of the Americas and of the world. They are incorporated in a book by Mr. Gill entitled "Tropical Forests of the Caribbean."

Thus, by a three-way course of developing professional leadership, of building public and scientific knowledge and of direct project action and cooperation, the Charles Lathrop Pack Forestry Foundation has spread its interest and support across the field of forest conservation and has become a vital influence in keeping American forestry on the march towards broader horizons and ever larger accomplishments. When its founder at the turn of the century first became interested in the national need for forest conservation, American forestry was in its seedling stage. To appraise fully his contributions through the pioneer years and those of his two sons through the Foundation in later years would be to attempt the impossible, so widespread has been the influence of their labors and benefactions. But it can be said that no finer example of family interest and public service, free of any motives of selfish gain, is to be found in the forest history of America.

AUTHORS

OVID BUTLER (*A Foundation for the Forest*) is editor-in-chief of AMERICAN FORESTS and executive director of The American Forestry Association. H. H. CHAPMAN (*The Case of the Public Range*) was Harriman Professor of Forest Management at the Yale School of Forestry until his retirement several years ago. ANWYL EVANS (*Fantasy Flowers*) writes of the region in which he lives, Phoenix, Arizona. A. G. HALL (*Why Emil Planted Trees*) is associate editor of AMERICAN FORESTS. HENRY S. KERNAN (*The Forest Frontier in Connecticut*) was regional consultant on the Forest Resource Appraisal and now lives in South Worcester, New York, where he is managing his own forest. CLAUDE M. KREIDER (*Trout for the Millions*) is a well-known California writer whose main hobby is trout fishing. JOHN B. WOODS (*Maple Syrup—Luxury Product*), nationally known forester, lists maple sugaring as one of his many interests. He divides his time between his farm in Vermont, Washington, D. C., and the Pacific Northwest.

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The Purpose

The American Forestry Association is a national organization—educational in character—for the advancement of the intelligent management and use of the country's forests and related resources of soil, water, wildlife and outdoor recreation. Its purpose is (1) to bring about adequate protection and perpetuation of these resources by creating an enlightened public appreciation of the need of conserving them through wise use for the present and future welfare and enjoyment of all the people; (2) to make available to Americans in all walks of life a wider knowledge and appreciation of their forest resources and the part they can play in the social and industrial life of our nation.

The History MORE THAN half a century ago American men and women of vision, stirred by the rapid destruction of forests and forest life in the United States, began to raise their voices in behalf of conservation. Foreseeing the danger of allowing America's rich forests and vast natural wealth to be thoughtlessly wasted, these public-spirited individuals protested the needless destruction that was taking place. Out of their efforts came a collective force—The American Forestry Association, first organized in 1875 and made a national influence in 1882.

The Record THUS The American Forestry Association has a long record of efficient public service. The establishment of the United States Forest Service and the creation of the nationwide system of state and national forests and parks were due in no small part to the Association's efforts. Its educational work, extending over more than seventy years, has stimulated public action and built public support for protection against forest fires and floods; for prevention and control of soil erosion; for the development of conservation policies in forest management for continuous production through wise use; for the control of forest insects and diseases and the preservation of fish and wildlife.

The Support FROM AN ORGANIZATION of a few hundred members three decades ago, the Association has attained a substantial membership of many thousand men and women, living in every state of the Union and in foreign countries throughout the world. The funds of the Association are administered by a Board of Directors composed of individuals of national standing—men and women who give their services free, who have a practical understanding of the nation's present-day conservation needs, and are equipped through experience, ability, enthusiasm and training to advance the Association's program.

The Program BECAUSE OF its independent, non-political character, the work of The American Forestry Association is vitally necessary in the field of public service. It provides an unprejudiced influence for the development of sound conservation measures. It helps coordinate public, state and federal policies. It cooperates closely with federal, state and private agencies in conservation work. At the same time it initiates, sponsors and carries on needed projects in conservation in addition to its regular broad continuous program of education.

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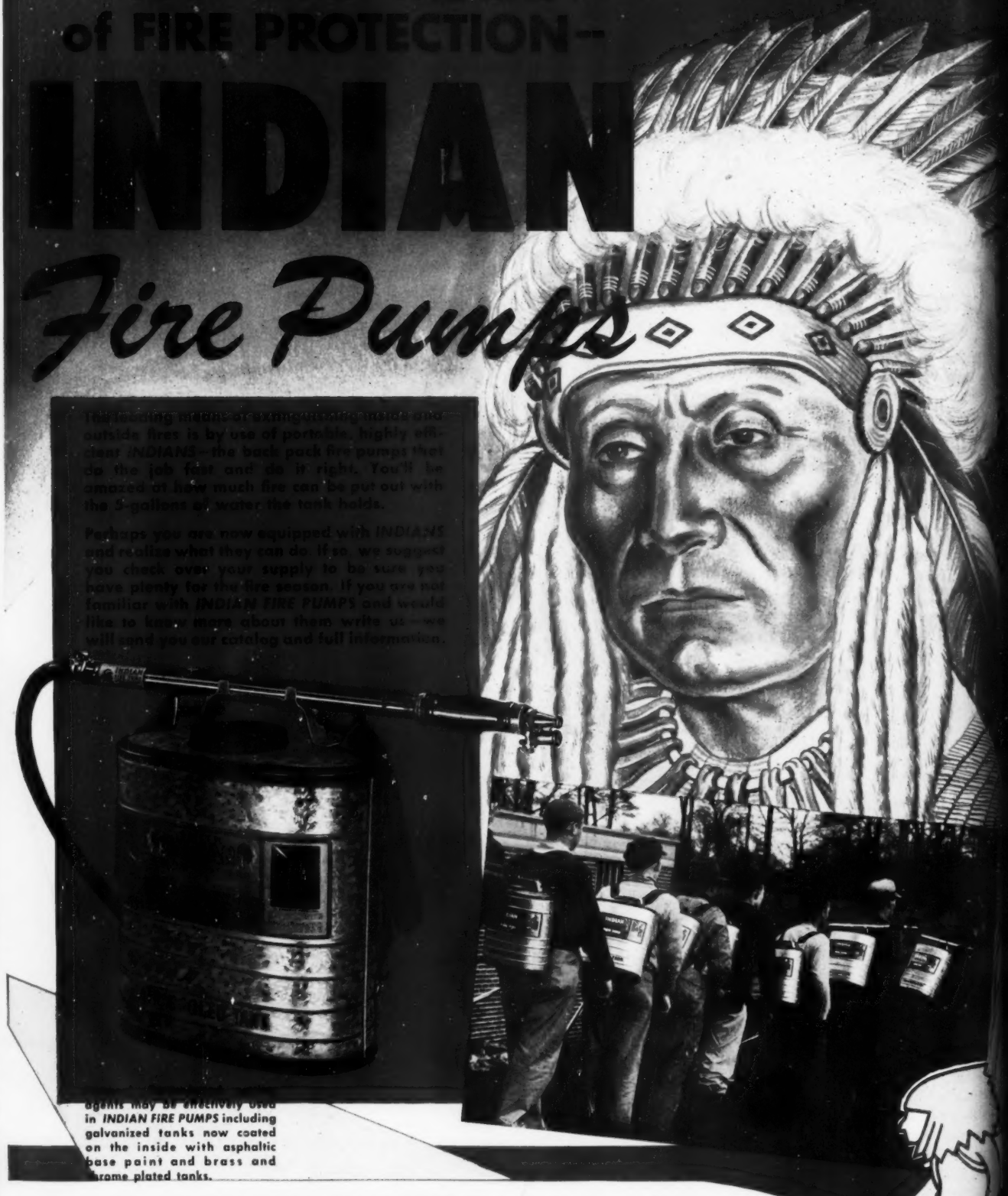

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